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Clinical Surgery from the Pacific Coast

SURGICAL CLINICS OF NORTH AMERICA

The October number comes from the clinical amphitheaters of the Pacific Coast, and embraces a wide variety of cases. There are cases of traumatic emphysema, myositis, spontaneous rupture of renal pelvis, aneurysm, gangrene following fracture, kidney disease, intestinal obstruction, liver abscess, persistent parotid fistulae, infection of lymphatics, thyroidectomy, plastic surgery of ear, thrombo-angiitis obliterans, lung abscess, epilepsy, hour-glass stomach, brain tumors, spinal fracture, cancer of thyroid, uterine prolapse, aneurysm of abdominal aorta, and others.

The cases presented were selected from a wealth of material offered at the clinics of San Francisco, Los Angeles, Santa Barbara, San Mateo, Portland, Seattle, Spokane, Everett, Ellensburg, Honolulu.

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CANCER OF THE BREAST

USE OF RADIUM AND ROENTGEN THERAPY IN CONJUNCTION WITH THE RADICAL OPERATION *

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AND

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It is well known that some English surgeons have recently abandoned surgery and are now advocating only the employment of irradiation in the treatment of carcinoma of the breast. In America also some well known radiologists are advocating irradiation to the absolute exclusion of surgery in this disease. On the other hand, there are surgeons in this country who believe irradiation actually stimulates cancer cell growth, and others who believe it lowers the surrounding tissue resistance so that cancer can develop more readily.

Certainly the report of the Committee on the Treatment of Malignant Diseases with Radium and X-Rays of the American College of Surgeons does not lead any one to hope for a cure to be derived from the exclusive [1] use of irradiation in the treatment of carcinoma of the breast.

Harrington [2] reviewed 1,859 cases from the Mayo Clinic and, after analyzing them, concluded that postoperative irradiation was of only little, if any, benefit.

Where such marked conflicts exist between honest and earnest men, the truth will probably be found somewhere between these two extremes.

In order to try to clarify our own mental uncertainty on this subject, we have reviewed as carefully as possible, with the incomplete and insufficient data at our disposal, the records of all cases of carcinoma of the breast in which operation was performed at the Jefferson Hospital, Roanoke, Va., between 1909 and 1930. Of course, there have been a number of inoperable cases seen during this period, which are not included in this series.

It was soon seen that no definite conclusions could be drawn from such a study of our limited experience, so we concluded to ascertain what was the general attitude and practice of other surgeons and radiologists as regards irradiation in association with surgery. With this in view, we sent a questionnaire to various surgeons and radiologists in this country and in Canada.

In other words, we have approached this question from three different angles: (1) our own clinical experience; (2) a review of the opinions of other surgeons, and (3) a review of the opinions of other radiologists.

CLINICAL EXPERIENCE

Our own clinical experience consists in analyzing as accurately as possible 341 cases of histologically proved carcinoma of the breast, all having had a Halsted radical operation. This series covers a period of about twenty years and is divided into three groups as follows:

1. From 1909 to 1920 there were 152 cases, and in this series only the radical operation, as advocated by the late Dr. Halsted, was done. At the end of five years, 32, or 22 per cent, of the patients were alive and apparently free from recurrences or metastases. In this group of 152 cases there were 8 patients whom we were unable to trace, and we assumed that these patients had died of cancer.

2. Starting in 1920, we began the placing of tubes containing radium in the field of operation and under the skin after the radical removal of the breast. We continued this method until 1924, and during this period there were 80 cases. Twenty-four, or 30 per cent, of these patients were alive and without recurrences after five years. In this group of 80 cases there were 5 patients whom we were unable to trace, and we assumed that these patients had died of cancer.

3. In 1924 we started the practice of adding high voltage roentgen exposures to the radical operation with the implantation of radium as previously mentioned. In this group there were 109 cases, only 18 of which have had their operations longer than five years. Ten, or 55 per cent, of these patients are alive and as yet without recurrences. Of course, this is far too small a number from which to draw any definite conclusions. In the remaining 81 cases in this group the time has been too short to be of any value, though, as far as we have been able to study them, there is apparently a marked decrease in the number of local recurrences and metastases.

In studying these cases, there are many factors other than operation and irradiation that have to be considered when attempting to estimate the relative value of any method. Chief among these undetermined factors are to be found the benefits resulting from the education of the public on matters pertaining to the necessity of early diagnosis and treatment of cancer. All surgeons are impressed with the fact that cases of carcinoma of the breast are being seen earlier, and therefore the results should be better.

It is possible that with increasing experience we are doing more thorough and complete operations as the years go by, but an honest effort has always been made to carry the dissection just as completely as the patient's condition permits in each case, and we do not

* Read before the Section on Surgery, General and Abdominal, at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

1. Surg. Gynec. Obst., August, 1929.

2. Harrington, S. W.: Carcinoma of the Breast, Surgical Treatment and Results, J. A. M. A. **92**: 208 (Jan. 19) 1929.

believe this factor accounts for any marked improvement in our results.

No "typing" or grading has been done for a sufficient number of years to be of any comparative value. It has been known for many years that the histologic study of malignant growths was of great prognostic value. It is hoped that the classifications of Broders [3] and others, as well as the abstract cards of the American College of Surgeons, will be more universally employed. If this is done, surgeons will be able to make comparisons of methods which will be of some value. Any comparison of two series of cases without some such standard is of but little value, for, without this aid, reliance will be placed on possibly inaccurate impressions, and dependence on facts will be neglected in arriving at conclusions. The review of our own cases illustrates only too well this situation.

For a number of years we have felt that one large gland in the axilla, not associated with numerous small ones, gave a more favorable prognosis than numerous small glands in the axilla. In a recent communication from Dr. James Ewing, he states that "cancer localized in one large lymphatic gland is less malignant than one which rapidly spreads from one node to another. The very fact that it remains in one node shows that it is less active, or else that the filter is more effective."

We recall a number of cases in which one large gland in the axilla was removed during a radical operation, and these cases have done far better as regards both metastasis and recurrences than those in which there were numerous small glands. Perhaps this type of gland should be considered in estimating relative prognosis in different groups along with whatever histologic grouping is employed.

In our series there has not been one patient having a palpable supraclavicular gland who has lived as long as one year after such a gland was discovered, regardless of what was done.

It has been our custom to make histologic sections of glands removed from the axilla. We regret to state that our reports are not sufficiently accurate to give the relative percentage of malignancy found in such glands examined. However, we have been impressed with the fact that palpable glands in the axilla associated with a malignant growth of the breast does not necessarily mean that the axillary glands will show malignant invasion. Of course, in the vast majority of such cases these axillary glands are malignant.

We have also found the clinical index of Lee and Stubenbord [4] to be of much prognostic value. Our experience coincides with that of other surgeons relative to the poor prognosis in carcinoma in the young.

In 1922, one of us [5] called attention to the effects of pregnancy on the remaining breast after removal of the other breast for carcinoma.

Kilgore,[6] in 1921, pointed out the incidence of cancer in the second breast, showing that if a patient survives five years she is "from three to four times more likely to develop cancer in the second breast than a normal woman of the same age in either of her two breasts."

When we first started using radium in 1920, we placed most of the tubes containing the radium as close to the axillary vessels as we considered safe. We then placed the remainder of the radium around in different localities under the skin flaps.

Since the publication of Handley's oration, read before the Clinical Congress of the American College of Surgeons at Montreal in 1926, we have been trying to follow the suggestions he gave relative to the placing of these tubes. He places these so that they are near the course of the lymphatic trunk which accompanies the internal mammary artery, and also so that they lie close to the glands which are contiguous to this artery. Handley placed his tubes in these regions, since these were the points at which he noticed the recurrences.

Some years ago, Dr. Halsted attached considerable prognostic importance to the finding of a gland under the falciform fascia. This observation coincides with the experience of Handley. Handley [7] reported a most instructive case in which a nodule appeared in the second intercostal space five years after operation. Two years later, another nodule came in the third space. The fourth and fifth spaces were invaded at about four months' intervals. All of these nodules appeared along the line usually occupied by the internal mammary glands. Twelve years after operation, this patient died. Handley feels that, had radium been employed in conjunction with surgery at the first operation, this patient would not have died of cancer.

Handley classified his cases into three groups:

1. Cases in which the internal mammary glands are not infected at the time of operation.
2. Cases in which these glands are so infected.
3. Cases in which the glands are infected, and in addition, the disease has already spread beyond them to the other glands within the thorax.

He advocated the postoperative use of radium in group 2 but considers it superfluous in group 1 and ineffective in group 3.

We use radium with the operation as a routine, because we do not feel that we are able to classify our cases definitely, and, in addition to this, radium so employed certainly does not do any harm. As far as we are able to estimate, there has been no interference with the healing of the wounds.

The radium is screened with 0.5 mm. of silver and 1.5 mm. of brass. These tubes are then placed in the long pure gum rubber tube, which is kept in position by a ligature about the rubber tube above and below the enclosed radium tube. The amount used is either 50 or 100 mg. of radium in the form of two 25 mg. tubes, and four 12.5 mg. tubes. This distributes the radium over a distance of some 6 inches, and our method has been to leave orders for the tube to be pulled down 2 inches every two hours until removed. It will be seen that this varies the dose, depending on the height to which the tube is placed. Roughly speaking, the tube is entirely removed at the end of twelve hours, which would obviously give a dosage of 1,200 mg. hours when the larger amount of radium is used.

We have not employed preoperative irradiation largely because we have not been able to control our patients. In the few instances in which we tried it, the patients have either received some benefit or thought they had, and then delayed operation until there was

3. Broders, A. C.: Squamous-Cell Epithelioma of the Lip, J. A. M. A. **74**: 656 (March 6) 1920.
4. Lee, B. J., and Stubenbord, J. G.: Clinical Index of Malignancy for Carcinoma of the Breast, Surg. Gynec. Obst. **47**: 812 (Dec.) 1928.
5. Trout, H. H.: The Remaining Breast After Radical Removal of the Opposite Side for Carcinoma, Surg. Gynec. Obst. **34**: 630 (May) 1922.
6. Kilgore, A. R.: The Incidence of Cancer in the Second Breast After Radical Removal of One Breast for Cancer, J. A. M. A. **77**: 454 (Aug. 6) 1921.
7. Handley, W. S.: Parasternal Invasion of the Thorax in Breast Cancer and Its Suppression by the Use of Radium Tube as an Operative Precaution, Surg. Gynec. Obst. **45**: 721 (Dec.) 1927.

definite glandular involvement. We have never practiced the method of giving one large massive dose before operation because in our hands such a dose produces too much nausea to permit an operation for several days, and this nausea starts a few hours after exposure to the high voltage therapy. Then, too, most of our patients with cancer of the breast are so apprehensive concerning the outcome of the operation that delay works a mental hardship.

There is apparently no doubt that irradiation heals the majority of surface epitheliomas and improves (if it does not cure) carcinoma of the cervix. In addition to these observations, some recurrences following radical operations for carcinoma of the breast disappear following irradiation. Occasionally one sees metastases decrease in size and in bone metastases the pain relieved, but we have never seen such a case "cured" by any type of irradiation.

Carnett and Howell,[8] in analyzing bone metastases in cancer of the breast, make the following statement:

> The complete modern breast operation, especially along the lines laid down by Handley, supplemented by irradiation, is seldom followed by external recurrence. In these days, patients exhibit skin nodules far less frequently than bone metastases.

If these observations are correct, it is reasonable to assume that sufficient and well directed postoperative irradiation will "kill" or retard the growth of any cancer cells that may inadvertently have been allowed to escape into the field of operation or any nearby extension which is impossible to remove with the complete operation. It is perfectly possible that insufficient dosage of irradiation will "fix" the tissues and make them "radioresistant."

Dr. James Ewing[9] stresses the importance of adequate doses:

> When one sees under the microscope the extensive changes, sometimes amounting to complete destruction of the mammary cancer by external radiation, one cannot escape the conclusion that preoperative irradiation of mammary cancer must be of value. Yet the doses delivered by the average radiologist or surgeon in these cases are ridiculously small. To produce definite results, one must deliver to the tumor at least two or three erythema doses, and this is very seldom accomplished. These tumors are resistant, and usually the best method is interstitial irradiation. After interstitial irradiation, we are now getting many breasts in which it is difficult to find any traces of carcinoma. Grounds for postoperative irradiation seem to me less clear and, again, the doses required must be considered. Assuming that small groups of cells remain beyond the operative field, full irradiation must inevitably damage such cells, but I fear that the doses ordinarily given are inadequate to accomplish much good. Yet, definite postoperative recurrences, visible and palpable, are often controlled by the ordinary radiologic treatment.

Many roentgenologists share the belief of this danger with him; hence it is important to be certain that sufficient dosage is given.

In visiting various hospitals and talking to different surgeons and radiologists, we find that the calibrating of x-ray machines is not as frequently done as physicists and x-ray manufacturers think necessary. Some years ago our attention was called to this possible error, and when we had a well known physicist calibrate our machine we were much shocked to find we had not known what dosages were being delivered.

8. Carnett, J. B., and Howell, J. C.: Bone Metastases in Breast Cases, Ann. Surg. **91**: 811 (June) 1930.
9. Ewing, James: Personal communication to the authors.

The technic employed at the Jefferson Hospital in the postoperative roentgen irradiation is, briefly, as follows:

The intensity output is estimated annually by a competent physicist, the calibration being made in terms of r units. The erythema value of 970 r units is obtained with 360 milliampere minutes at 200 peak kilovolts, 50 cm. distance, and 5 milliamperes. The filters used are 0.5 mm. of copper and 1 mm. of aluminum.

Therapy is started in from seven to ten days after operation. The portals for the chest wall are 20 by 20 cm., but smaller portals are used in the axilla and supraclavicular region. Each area is treated daily with small doses, which usually cause little or no roentgen sickness. A daily radiation loss of 7 per cent is allowed for and the treatments are continued until the 970 r is given. The total time taken for this series is from fifteen to twenty days. The treatment series is not repeated. The initial and subsequent dosage may vary with the individual, but treatment is always carried to the skin saturation point.

We have tried the cautery excision of the breast but have had too few cases to draw any conclusion further than the fact that in our hands the healing was not as good as when the incision and dissection were done with the knife. From experimental work done by others, apparently, there is no doubt that actual heat kills cancer cells at a slightly lower temperature than it destroys most normal cells. Certainly in Dr. A. C. Scott's hands excellent healing is obtained, and were we able to obtain as good, we would add the cautery to our armamentarium.

To summarize our impressions from a study of our own cases, we feel that there are many factors which have produced improvements in our results, and that, while postoperative irradiation may be one of these factors, there are many others which have helped, chief among which is cancer education. We have seen no harm—mental, physical or financial—resulting from postoperative irradiation, and expect to continue its use until we obtain something better.

QUESTIONNAIRE SENT TO SURGEONS

We sent a questionnaire to 149 surgeons and received 138 replies. At the bottom of this sheet a space was left for voluntary remarks. One hundred and twenty-nine, or 94.5 per cent, had remarks to make, which shows that the question of irradiation in connection with radical surgery is a live subject with the vast majority of surgeons.

The following is a brief résumé of the various answers to the questionnaire sent to these surgeons, all of whom have membership in either the American Surgical Association or the Southern Surgical Association:

Question 1. Do you employ preoperative irradiation?

(*a*) Twenty-six employ preoperative irradiation as a routine.

(*b*) Eight employ preoperative irradiation occasionally; usually in advanced cases.

(*c*) One hundred and four never employ preoperative irradiation.

(*d*) Of the thirty-four who employ preoperative irradiation, all use postoperative irradiation also.

Question 2. Do you employ postoperative irradiation?

(*a*) Eighty-three use postoperative irradiation as a routine. Three use it not because of any faith they have in it but to prevent criticism, especially from the public, and have not seen ill effects from its use. One feels that he obtains marked

benefit in 10 per cent of cases because such cases happen to be radiosensitive. He does not suggest any method of ascertaining which cases are radiosensitive and which ones are not. Concerning the remainder, there are too many widely divergent opinions for tabulation.

(*b*) Fifteen never employ postoperative irradiation. Two because of bad mental effect on the patient. Three discarded use of irradiation before the advent of high voltage therapy. One feels that irradiation stimulates cancer growth. Two feel that it tends to make surgeons do less extensive operation. One has never used irradiation and claims that he does not feel that he knows anything about it. One discontinued its use following a report of the American College of Surgeons. The remaining five offered no explanation as to their reason for not using postoperative irradiation.

(*c*) Forty use it occasionally. Twelve use it only after recurrences have actually occurred. Twenty-three employ it when they think there are apt to be recurrences; e. g., glands in the axilla and adherence of growth to the chest wall. Three use it only when the family physician insists on its use. One uses it only after incomplete palliative operations in the aged. One uses it only in patients under 36 years of age.

Question 3. If so, x-rays, radium or both?

Of 123 using postoperative irradiation, 90 employ x-rays, one employs radium alone, and 32 use both x-rays and radium in the same patient. One surgeon calls attention to the possibility of insufficient dosage making the tissues become "roentgen fixed."

QUESTIONNAIRE SENT TO RADIOLOGISTS

We sent a questionnaire to 199 radiologists and received 130 replies. At the bottom of this sheet was left a space for voluntary remarks. Ninety-three, or 71 per cent, had remarks to make, which indicated that radiologists also are interested in the question of irradiation in association with surgery.

The following is a brief résumé of the various answers to the questionnaire which was sent to these radiologists, all of whom have membership in either the American Roentgen Ray Society or the Radiological Society of North America.

Question 1. Do you believe in fairly early and routine postoperative irradiation following radical removal of the breast for carcinoma?

(*a*) One hundred and nineteen answered in the affirmative.

(*b*) Eleven answered in the negative.

Of the 119 who answered in the affirmative, there were too many remarks made to be tabulated. Of the 11 who do not believe in postoperative irradiation as a routine, 7 employ x-rays for recurrences. One does not believe that surgery has any place in the treatment of carcinoma of the breast. One employs it when so desired by the physician. One stated that it was of no proved benefit and therefore never given. One had no remarks to make.

Question 2. If so, x-rays, radium or both?

Ninety-three used x-rays, 2 radium, and 24 both. Of course, this is explained by the fact that very few localities have sufficient amounts of radium to permit the giving of proper dosage.

Question 3. What dosage do you employ?

Ten employ from 100 to 124 kilovolt peak; thirty-one, from 125 to 149; twenty, from 150 to 179; forty-nine, more than 180. Massive, 33; repeated smaller doses, 75.

Question 4. Have you noticed any ill effects from irradiation, such as:

(*a*) Breaking down of incision? No, 112; yes, 7. From the various remarks made, it would seem that the general opinion is that such is due to improper dosage.

(*b*) Lung fibrosis? Eighty have not seen this; forty-six have seen it.

While the expression "lung fibrosis" was employed in the questionnaire, we are now convinced that this term was an unfortunate selection. Probably the expression "pluropulmonary reaction," as has been suggested, is a far more accurate description, as "lung fibrosis" implies permanent fibrotic changes. From the remarks that accompanied the replies, we are led to conclude that the large majority of men replying in the affirmative to this question really referred to a transient pleuropulmonary reaction. However, this is a dangerous sequela against which every known precaution should be employed.

(*c*) Nausea? All except nineteen have noted its presence.

Question 5. Have you ever seen irradiation stimulate cancer growth?

Fifteen thought that they had observed this phenomena. Five had seen it with sarcoma. Six had seen it with epithelioma. Four had seen it with recurrences after breast operations. The majority had seen this only with insufficient doses.

Question 6. Have you found "typing" based on histology of value in estimating "radiosensitivity"? Yes, 42; no, 52; no experience, 32.

It is a significant fact, as ascertained from these replies, that when the surgeons are opposed to postoperative irradiation, so also are the radiologists.

SUMMARY

From a follow up of our own cases, we find that our results have improved since the employment of postoperative irradiation, but we do not feel that such improvement is entirely due to the irradiation but rather to cancer education. However, we feel that postoperative irradiation is of distinct value and should be employed as a routine. We have seen no ill effects from postoperative irradiation, though we realize that unless a surgeon is careful he may relax in the thoroughness with which he does a radical excision, hoping that such irradiation will perhaps compensate for his dereliction.

We believe that the placing of tubes of radium under the skin at operation followed by sufficient and properly directed roentgen treatment is the best manner of giving postoperative irradiation.

Not enough time has elapsed to estimate the results of the newer roentgen treatment, but there are many indications that with the methods now in vogue the beneficial results of postoperative irradiation will be more definite.

It has never been proved that properly given postoperative irradiation is harmful; it is generally believed that irradiation is helpful in other parts of the body, and 89 per cent of the surgeons and 91 per cent of the radiologists who replied to a questionnaire assume that postoperative irradiation is beneficial as the adjunct to surgical treatment of carcinoma of the breast. Therefore we believe that the patient should be given the benefit of postoperative irradiation as a routine.

Jefferson Hospital.

The Importance of General Practice.—In the trend toward specialism the pendulum is swinging too far, and it is the duty of medical educators and leaders to indicate to their students the importance of general practice and the high profession attainments that are necessary for success in it. But this alone will not suffice. In the last analysis it is the attitude of the public which will determine the careers of many of our future medical men. If the public will but realize that it can have no greater asset than a close and continued personal relationship with a wise, sound, general adviser, it may rest assured that there will always be an adequate response to the call for service. In order to get the best type of medical men to turn to general practice, however, it is necessary for the public to understand that the qualifications for general practice are at least as high as those which are requisite for specialism, and to appreciate that the general practitioner is worthy of its respect and confidence.—Peabody, F. W.: Doctor and Patient, New York, Macmillan Company, 1930.

PROBLEM OF TUMORS OF BREAST FROM STANDPOINT OF GENERAL PRACTITIONER AND SURGEON

DIAGNOSIS, TREATMENT, PATHOLOGY AND PROGNOSIS *

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I will discuss the problem of tumors of the breast from the practical clinical standpoint and give the conclusions which I have arrived at from my experience in my own clinic and in my laboratory. Tumors of the breast are very common. They occur in about three women in a hundred. They are comparatively rare in men. They occur about fifty to a hundred times as often in women as in men. For clinical purposes tumors of the breast can be classified in a very simple way.

In a surgical clinic in which during the year 300 women present themselves with the problem of tumor of the breast, 100 will not have a tumor at all, 100 will have a benign tumor, and 100 will have a malignant tumor.

Those who have no tumor at all form a most important group. They must be carefully studied, as they are an essential part of this problem. These patients fall into several groups:

1. Women who are alarmed about their having a breast tumor and come direct to the clinic; often they are in the fear of cancer because some relative or friend has had cancer. An examination shows no tumor.

2. Women who have consulted a general practitioner about their breast and have been told that they have a tumor and have been referred to the clinic for operation. Examination shows no tumor. The explanation here is simple. The woman herself thinks she has a tumor and the physician examines the breast and thinks that he can make out a tumor as he palpates a certain part of the breast. This often occurs when the woman has a normal but lobulated breast; palpating one of these lobules gives one the impression of a tumor, but with a little more experience with these cases the physician would learn that if he picked up the periphery of this breast at almost any point between the thumb and the finger it would give him the sensation of a tumor.

3. The woman in fear of a breast tumor who consults her family physician, who thinks she may have a breast tumor and refers her to a surgeon, who tells her that she has a tumor and needs an operation. Often the statement is made that an immediate operation should be done. Badly frightened, the woman or her husband desires another opinion and comes to the clinic. An examination at the clinic fails to find a tumor of the breast and it is evident that no operation is required. Here the explanation is more difficult. One can easily understand the woman's being unnecessarily alarmed and mistaken, and the family physician who has had a limited experience with tumors of the breast; but what about the man who poses as a surgical expert who has strongly advised an operation for breast tumor when none exists? The explanation must be ignorance, bad judgment or lack of sound ethics. I have seen repeatedly examples of all three. Some men pose as expert surgeons who are not in fact expert surgeons, and such a one can easily and honestly be mistaken. Again lacking good judgment, a consulting surgeon may advise the removal of a breast when no tumor exists, controlled by the thought that, although he cannot demonstrate a definite tangible tumor, one may exist and the operation is justifiable. The logic here is simple and clear. Tumors of the breast are definite, tangible and palpable lumps like a bean, an English walnut, an egg or an apple, and one should not strain his imagination or the eyesight at the end of the palpation finger and force the diagnosis of a tumor where none exists. Diffuse carcinoma of the breast may exist without a palpable tumor, but the other evidences are definite. A surgeon who lacks sound ethics performs an operation for the removal of the breast in a case in which the woman comes to him in the fear of cancer when no cancer and no tumor exist. One's first reaction to such a statement is that such a thing must be impossible; but I have seen so many cases and have investigated so many with care in which operations for the removal of the breast have been advised, when the most careful examination showed no tumor and when repeated examinations over a period of months and years disclosed no tumor, that I am forced to the conclusion that too many amputations of the breast are made on insufficient indications.

It is a fact that no one is infallible, that every one, even with the best intentions, makes mistakes; but certainly with the present knowledge of tumors of the breast there is little excuse today to remove a breast for tumor when none exists. In a case in which the surgeon is uncertain, an exploratory incision and the removal of a section for examination can be done easily and safely, and an unnecessary operation avoided.

Of the 300 women coming to the clinic, 100 have no tumor and require no operation. These women are, of course, grateful and most of them are satisfied with the simple assurance that they have no tumor and do not require an operation. A few of them who are in great fear of cancer come back repeatedly and need repeated and positive assurance that they have no cancer before they are finally convinced.

The other 200 women who are examined have a breast tumor. About half of these have benign tumors or benign conditions of the breast, and about one half have cancer. The essential benign tumors of the breast are fibro-adenomas and fibrocystic disease, the so-called chronic cystic mastitis of the breast. The malignant tumors of the breast are carcinomas in all but 1 or 2 per cent of cases and these are sarcomas.

The usual problem that must be solved in a woman who has a lump in the breast is: Is it a cancer, a fibro-adenoma or fibrocystic disease of the breast, or is it a granuloma such as tuberculosis? The correct clinical diagnosis can be made in more than nine tenths of the cases from the history and clinical examination.

How is the diagnosis made? The most satisfactory method of examining the breast is to have the woman in the erect or sitting position. The finding of a tumor with the woman in the recumbent position is more difficult. I have had a number of women tell me that they can feel the lump when they are standing up but not when they are lying down, and I have demonstrated this many times in examining for a breast tumor. The breast should first be examined with the flat of the hand by very gentle pressure and, if a lump is felt, the breast should be fixed with the left hand and the lump picked up with the thumb and forefinger of the right hand. Fixing the breast firmly with the left hand, one should

* Read before the Section on Surgery, General and Abdominal, at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

now move the lump between the thumb and the forefinger of the right hand in the breast tissue as freely as possible to see whether it is freely movable or fixed and frozen into the breast tissue. This is the most important single piece of evidence that one can obtain in making an examination of breast tumors. The benign tumors are freely movable in the breast tissue. The malignant tumors are fixed and frozen into the breast tissue. On trying to move a carcinoma, one finds that it is so fixed in the breast tissue that the mammary gland moves with the tumor.

What is the explanation of this fact? The ancients called malignant tumors cancer—the crab—because like a crab it had legs extending into the tissues about it, and in fact this is true of cancer; for, extending for some distance beyond the gross primary lesion which one can see with the naked eye, processes permeate far out into the surrounding breast tissue which can be demonstrated with the microscope and these processes fix the cancer so that it is so frozen into the breast that when the lump is moved the breast tissue moves with it.

Far different conditions are found in examining a benign tumor of the breast. In examining an encapsulated fibro-adenoma one will find the tumor freely movable in the breast, often surprisingly movable, so that it can be moved an inch or two without any perceptible movement of the breast tissue, and usually, but to a more limited extent, the same free movement is found in examining a cyst of the breast and in cystic disease of the breast where the lump is not encapsulated. Although they are not encapsulated, they are not frozen into the breast by processes extending out from them as in a cancer; and because of that fact fairly free movement of the cyst in the breast can be obtained.

In making an early diagnosis of cancer of the breast when the lesion is still limited to the breast, the problem is solved by determining whether it is fixed and frozen into the breast or movable. The same fundamental facts that produce fixation in a cancer produce two other clinical facts of great value in making the diagnosis of cancer of the breast: dimpling of the skin over the lump and retraction of the nipple. Women often come to me for examination of the breast saying that they have discovered a dimple in the breast which they have never seen before; this almost invariably means cancer.

The cases of cancer of the breast which can be cured by operation are those in which the lesion is still limited to the block of tissue which can be removed at the operation, and in these cases the only pieces of evidence that can be obtained are the existence of a lump fixed in the breast tissue. The old textbook symptoms of cancer of the breast, pain, enlarged glands in the axilla, fixation of the breast to the thorax, evidences of carcinomatous cachexia and enlarged glands above the clavicle, tell all too plainly the story of an advanced process which may be palliated but not cured.

In making a differential diagnosis between fibro-adenoma and fibrocystic disease of the breast, one may find much difficulty. I am often uncertain, especially in the case of a single lump, whether I have a solid or a cystic tumor to deal with.

One of the most interesting and common conditions of the breast is still a pathologic problem. I refer to the chronic cystic mastitis of Koenig, the maladie cystique of Reclus, the cystadenoma mammae of Schimmelbusch and the fibromatosis of Fragenheim and Dietrich. This condition furnishes, next to carcinoma, the greatest number of breast cases. Koenig believed that it was due to chronic inflammation of the breast with resulting cyst formation; Reclus believed it was a cystic disease of the breast and not neoplastic; Schimmelbusch regarded it as neoplastic, and the process is often spoken of as Schimmelbusch tumors; Fragenheim and Dietrich regard the process as a senile or presenile involution change due to hormones from the ovary. This last conception seems very plausible.

From the standpoint of the clinical surgeon I believe that it must be discussed with breast tumors and I have described it under the head of fibrocystic disease of the breast. The process includes the large solitary cyst, the multiple cysts in one or both breasts and a wide variety of conditions between these extremes. It must also be made to include a chronic fibromatosis of the breast with little evidence of cyst formation.

From the pathologic standpoint the term fibrocystic disease of the breast probably describes better than any other term the true nature of the process.

For clinical purposes the best classification of tumors of the breast is into benign and malignant, as in the accompanying tabulation.

Classification of Tumors of the Breast

Benign	1. Fibro-adenomas, which consist of	Pericanalicular and intracanalicular, with the special cauliflower type called cystosarcoma phyllodes; intraductal fibro-adenoma
	2. Papillomatous cysts: true tumor of the breast resembling true ovarian tumors	These papillomatous cysts, which are classed as true neoplasms and not as cysts developing in the course of fibrocystic disease of the breast, have been exceedingly rare in the author's clinic
	3. Fibrocystic disease of the breast or chronic cystic mastitis	Single blue dome cyst; multiple cystic disease; chronic fibromatosis of breast
Malignant	1. Sarcoma, probably forming less than 2 per cent of malignant tumors	Spindle cell and round cell, very few giant cell; many sarcomas are more or less cystic
	2. Carcinoma, forming more than 98 per cent of malignant tumors	1. Simple carcinoma 2. Diffuse carcinoma 3. Medullary carcinoma 4. Colloid carcinoma 5. Adenocarcinoma 6. Carcinomatous cysts 7. Paget's disease

BENIGN TUMORS

The fibro-adenomas are easily recognized. They are encapsulated, freely movable and hard on palpation. One cannot differentiate clinically the pericanalicular from the intracanalicular; in fact, in some tumors both pericanalicular and intracanalicular tissue can be seen in the same field. The special and unusual clinical picture is the cauliflower type, the improperly called cystosarcoma phyllodes, which is not a sarcoma at all but a benign tumor of the intracanalicular type, which grows rapidly like a cauliflower and by pressure necrosis sometimes produces an ulceration of the overlying skin permitting the tumor to grow out as an ulcerating necrotic mass, producing the impression of a fungating malignant tumor. The term cystosarcoma phyllodes should be dropped. The better term would be cystofibroma phyllodes or fungating intracanalicular fibro-adenoma. These cases are not especially common. The safe way to handle them is to make an exploratory incision under a general anesthetic and have a frozen section examined at once to determine the diagnosis. The condition demands simply the thorough removal of the tumor and not a radical amputation of the breast.

Papillomatous Cysts; Cystadenoma of the Breast.—These are true tumors and are to be distinguished from retention cysts and the cysts that are so common in

chronic cystic mastitis, just as multiple follicular cysts of the ovary are to be distinguished from true ovarian tumors. Many of these have papillomatous ingrowths projecting into the cyst cavity. These may produce bleeding from the nipple. These papillomatous cysts may be malignant or may begin as benign and become malignant later. These true cystic tumors of the breast are not common. One will see more than ten cysts of the breast due to chronic cystic mastitis to one true cystic tumor of the breast.

One form that is of especial interest is a papillomatous tumor or a fibro-adenoma in a milk duct which gives rise to a bleeding nipple and which can often be located with the tip of the finger and either felt or located by producing bleeding from the nipple by pressure over the tumor.

The most common form of benign lump in the breast is produced by the process called chronic cystic mastitis, fibrocystic disease of the breast, fibromatosis of the breast. This, as I have already stated, is not inflammatory or neoplastic but probably an involution change in which fibrous tissue and retention cysts are produced. There may be but a single large blue dome cyst, surrounded by a few satellite cysts; there may be an extensive cystic disease involving a large part of the breast or there may be a general fibrosis of the breast with small cysts sparsely placed in the tissue. This process is probably initiated by hormones from the ovary; the hormones that produce the changes in the breast in menstruation and pregnancy. The process is a senile or presenile involution change. It has been my practice to operate on these benign tumors and remove them by a local resection which I shall describe more in detail, especially for the purpose of making a definite diagnosis.

MALIGNANT TUMORS

Sarcoma can be dismissed with a few words. Sarcoma is so rare that even in a busy clinic it is seldom seen. Probably less than 2 per cent of malignant tumors of the breast are sarcomas. The old statistics of Billroth and Gross on breast tumors cannot be accepted today. They thought that more than 80 per cent were carcinomas, about 9 per cent sarcomas and about 9 per cent benign. Statistics today are that more than half of breast tumors are benign, less than half malignant and only about 1 or 2 per cent sarcomas.

Most of the sarcomas are spindle-cell, some round and a few giant-cell; about one half of the sarcomas are more or less cystic. They should be handled by the same radical operation as carcinomas. In their early development they may be difficult to differentiate from benign tumors. A definite diagnosis can be made only by the microscopic section.

Clinically, the most important tumor of the breast is carcinoma. One must be able to recognize several clinical forms:

First, simple carcinoma with a definite single palpable frozen-in tumor.

Second, diffuse carcinoma involving the breast widely, often so diffuse that no palpable tumor can be made out. The skin is edematous from lymphatic obstruction producing a lymphedema and looks like a pig-skin saddle. The mammary gland is larger than normal and often looks as though inflamed, and it is often mistaken for an inflammatory lesion.

After one has seen a number of such breasts the site of a diffused carcinoma, the diagnosis is not difficult; the prognosis is bad. The cancer of the breast in which there is a definite palpable single tumor may be either hard or soft or cystic or an adenocarcinoma or be the site of mucoid degeneration. These differences are not of great interest or importance clinically and are usually determined on microscopic examination which must, of course, always be made.

Another form that must be recognized clinically is the condition called Paget's disease of the breast. This is not uncommon. It has a distinct clinical picture which can be easily recognized after it is seen a few times. There is usually no palpable tumor in the breast, but in advanced cases there may be one. The nipple is the site of an eczematous skin lesion; the nipple is retracted and covered with a red weeping integument which bleeds easily. It is to be differentiated from simple eczema, which is not as a rule of as long standing and which should disappear under proper treatment. It has given rise to much controversy since it was first described by Paget in 1874. Its pathology is now thoroughly understood. It is a carcinoma beginning in the milk ducts and extending to the skin around the nipple, and the eczema is secondary to the carcinoma. The carcinoma is not secondary to the eczema. No mistake should be made in the handling of this condition. It should not be handled medically or with roentgen treatment but should be treated as any other cancer of the breast by radical amputation.

The operative technic for tumors of the breast has become standardized. The benign tumors should be removed by local excision, the malignant by the radical breast operation. One cannot always be sure in a given case, however, whether one has a benign or a malignant tumor to deal with and this fact must, of course, be first determined. One must always be prepared in a given case to do either a local or a radical operation.

The patient is told before the operation that the diagnosis cannot be determined with absolute certainty except by a microscopic examination.

The patient is prepared for operation. I prefer ethylene as the anesthetic. Ethylene should never be used, however, unless the operating room has been properly grounded to prevent static. With this proper grounding, ethylene is just as safe as the use of gasoline in one's automobile. More than nine times out of ten the clinical diagnosis is sufficiently clear to warrant the surgeon in proceeding at once to do either a local excision or a radical operation. In possibly one case out of ten the experienced surgeon is uncertain and an exploratory incision down on the tumor is necessary. In almost all of these cases—say in 95 per cent—the character of the tumor can be determined from its gross appearance on section. In a case in which there is doubt, a frozen section is made at once and a microscopic examination obtained. With such a scheme of procedure the surgeon can safely decide on either a local or a radical operation on the basis of the evidence obtained.

In operating on benign tumors I almost always employ Warren's incision made in the fold under and to the outer side of the breast, turn the breast upside down, expose the tumor from beneath, remove the tumor by clean-cut sharp dissection, removing an elliptic mass containing the tumor, sew the incision in the breast together with catgut, close the superficial fascia with catgut, and close the skin incision with a fine catgut subcuticular stitch. This makes a fine closure and a barely visible scar. These cases should all be drained

with soft collapsible rubber tubes for about three days, as there may be some bleeding and a considerable amount of primary wound secretion. Occasionally a benign tumor is better removed by an incision directly through the skin over the tumor. Here the incision should radiate from the nipple. The same incision should be employed in the doubtful case in which there is uncertainty as to diagnosis.

In doing the radical operation for cancer of the breast there are certain definite surgical principles that must be followed. The entire breast must be removed, the overlying skin widely, the underlying pectoralis major, and if necessary the minor, and the axillary space of the fat and lymphatic glands cleaned out. No fixed set incision should be adopted, but the incision must be planned so that as near as possible the primary lesion will be in the center of the block of tissue removed.

The incision should be planned and can be planned so that in almost all cases a skin closure can be made without tension, making skin grafting seldom necessary. Patients should be sitting up the day after operation and leave the hospital in from ten to twelve days. The mortality is very low. It should not exceed 1 per cent.

PROGNOSIS

What is the prognosis in operations for tumor of the breast? In benign cases there should be no mortality and no recurrence. To be sure, other fibroadenomas may form in that breast or in the other breast, and there may also be a recurrence or a continuation of the same process when a cystic tumor in chronic cystic mastitis has been removed. One seldom sees, however, a carcinoma develop in a breast from which a tumor proved to be benign has been removed. I believe that there is little likelihood of a benign tumor degenerating into a carcinoma. There is one form of tumor, the papillomatous cyst, which is like the papillomatous cyst of the ovary and which, if it is early removed and completely removed, seldom returns, but which may, if it is allowed to remain, develop into a malignant papilloma.

What is the prognosis in cancer of the breast today? In the cases in which the cancerous disease is limited to the breast and the block of tissue removed at operation and the axillary glands are not involved, the prognosis is excellent, probably 75 per cent of cures. In those, on the other hand, in which the axillary glands are involved, it at once sinks to less than 10 per cent of cures; and in the cases in which the glands above the clavicle are involved, it sinks almost to zero. As the patients come to the clinic, in most of them at operation the axillary glands are found to be already involved, and these cases reduce markedly the percentage of permanent cures.

What about roentgen treatment? I believe in a thorough course of roentgen treatment after the operation; not in massive doses but in very moderate doses continued for some time. I have seen great injury done by massive doses—fibrosis of the lungs and extensive burns.

Cancer of the breast can be cured. It can be permanently cured in the cases which are recognized early and in which operation is performed early. I am thoroughly converted to the position that the campaign of education that is being carried on by the Society for the Control of Cancer and by the profession as a whole is leading to earlier diagnosis and more cures, and should receive the support of the entire profession.

122 South Michigan Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. TROUT AND PETERSON AND DR. BEVAN

DR. DALLAS B. PHEMISTER, Chicago: I believe that the indications for radical removal of carcinoma of the breast and neighboring metastases should be pushed to the extreme. The operation is neither a dangerous nor a particularly discomforting one. Occasionally it will result in a cure and usually it will prolong life. Also, the conditions for irradiation are more favorable. I want to emphasize what Dr. Bevan said about chronic cystic mastitis. The condition is not a neoplasm and should not be treated by operation. Single lesions may be operated on because of uncertainty of diagnosis, but once the diagnosis is established the subsequent recurrences should be left alone.

DR. MARTIN TINKER, Ithaca, N. Y.: A recent paper by Forssell of Stockholm gives a report of the results of the efforts of a nation to combat cancer. He called attention to the fact that certain forms of malignancy are best treated by surgery alone, others by surgery in combination with irradiation, and still others by radium or x-rays alone. It is gratifying, I think, to see that Drs. Bevan, Trout and Peterson, and Phemister all believe that these measures have value, that the chances of cure are being increased by use of radiation in connection with surgery. No one questions, I think, that, in dealing with breast cancer, radical operation is the first thing to consider. If, however, the chances of permanent cure can be added to considerably by the use of radiation, it surely should be considered. For fifteen years I have been combining surgery with radium, more particularly; not that I use radium myself; I think the use of radium or radiology belongs to a group of men who devote their entire time to that line of work; but if radiologic work is turned over to men who are expert, I believe thoroughly that it gives the patient a better chance. Forssell emphasizes this point in his paper that in the institute at Stockholm the best results have been obtained by men who have had experience over considerable periods of time in using radium and x-rays in the treatment of these conditions. A second point is that in many instances a large amount of radium is necessary to produce the best results. Another point that has not been mentioned, but in which many are interested, is the question of electrosurgery. I have been experimenting with electrosurgery for fifteen months, and it seems that sealing lymphatics and blood vessels does add somewhat to the prospect of permanent cure in these cases.

DR. JACOB H. VASTINE, Philadelphia: Recently Pfahler and Parry reviewed 977 cases that had been treated in the office. In the postoperative group, in which radiation therapy was instituted within three weeks after the operation, 62 per cent were alive after three years, and 55.5 per cent were alive after five years. This includes all postoperative cases, both those with and those without glandular involvement at operation. Of the patients who had only the primary lesion and no evidence of metastases in the axilla, supraclavicular glands or elsewhere, there were 96 per cent alive after three years and 87 per cent alive after five years. These are microscopically proved cases and the patients are alive. There is no opportunity for the personal equation to creep in. I feel that these results are gratifying. Dr. Bevan has quoted 75 per cent surgical cures. My five-year cures are 87 per cent. This would indicate that 12 per cent has been added by postoperative irradiation, and I think that that justifies the employment of irradiation as a routine postoperative measure. Dr. Bevan has said that 10 per cent of the cases with axillary metastases can be cured surgically. In my group, those in which axillary metastases were microscopically present in the axilla, with the breast and axilla removed surgically, followed immediately by postoperative irradiation, 63 per cent were alive after three years and 55 per cent were alive after five years. This also would seem to me to indicate that a patient's chances are enhanced by postoperative irradiation. These results cannot be duplicated by a standardized technic and with treatments given in a perfunctory manner by a technician. Each case must be studied carefully, intelligently and individually. The rays must

be properly directed and the dosage properly calibrated so that the maximum therapeutic effect is obtained without harm to skin or lung.

DR. F. F. LAWRENCE, Columbus, Ohio: Cancer is no respecter of persons. Cancer of the breast occurs in both male and female. It is no respecter of age. The fallacy of teaching that only people past 35 develop cancer should be emphasized. Cancer in the beginning is painless. Hence a painless lump in the breast should be given careful and thorough attention to make sure that it is not cancer. Metastases are aided by, if not caused by, rubbing or manipulation. Hence, a breast with a lump in it should never be rubbed, massaged or otherwise manipulated. Consequently, the lotion, ointment or other application applied to a breast with the hope of causing absorption should be tabu. Enlargement of the lymphatics is a positive evidence of metastasis. Hence, to wait for a diagnosis of cancer of the breast until there is axillary enlargement is to wait too long. There is no such thing as a cancer cure, that is, a positive cure for cancer, at the present time. The public should be educated to the fakery and dishonesty of all claims of cancer cures. It is to be hoped that research work may soon be effective. What is known about cancer is that it is not a germ disease, that it is not infectious, that it is not hereditary, and that it develops after long continued irritation. Hence, all forms or sources of irritation should be guarded against. It is not known why irritation produces proliferation of epithelial cells in one case, carcinoma and a reversion to embryonic cells in the other, and sarcoma, but it is known that it does. Being painless in the early stages, it has caused many patients to go beyond the operative stage. Hence, it is a safe position to take that every lump of the breast, no matter how small, should be removed and examined. If found benign, well and good. If found suspicious, the breast should be removed. If found positively carcinoma, the radical operation is indicated.

DR. ARTHUR DEAN BEVAN, Chicago: In regard to the anesthetic, I believe that ethylene is an ideal anesthetic for a breast amputation. I like it better than nitrous oxide, because a larger amount of oxygen can be used, and I like it much better than ether. The patient can be kept anesthetized with 20 per cent of oxygen. Ethylene can be used with just as much safety in the operating room as gasoline can be used in the automobile. There are these things, however, that must be recognized and observed: that there must not be any naked flame or cautery in the room, and that static must be done away with. Eight explosions occurred during a period of years when I was beginning to use ethylene, five from ethylene, two from nitrous oxide and one from ether; fortunately, none of these were serious and no patient was injured. In the last two or three years since static has been eliminated, more than 10,000 ethylene anesthesias have been employed without any trouble whatever, and there has been no further trouble with explosions from nitrous oxide and oxygen and ether in the machine. The method is simple. It costs about $35 to equip an operating room. The surgeon operates on a steel mat measuring about 10 by 12, made of rustless steel. This is tied up to the plumbing, a chain from the operating table to the steel mat and from the anesthetizing machine to the steel mat. Then special precautions are taken in regard to the anesthetizing machine itself so as to eliminate static charge from the rubber tubing—steel inside and outside of the tube, and a thin coat of mail around the bag. One thing done in almost all cases unless the evidence is very conclusive is that the woman is brought to the operating room with the knowledge that she is to be operated on for tumor of the breast. The patient is told that the exact character of the tumor cannot be determined until after the operation. It is true that with a little careful study the surgeon who is familiar with gross pathology can probably tell in 95 or, as Francis Carter Wood says, in 98 per cent of the cases the difference between a malignant and a benign tumor on gross section. As a matter of fact, the gross section is much more determining, as a rule, than a frozen section. However, I always use a frozen section whenever there is any indication for it. But carcinoma is typical; there is the same difference between a carcinoma and a fibroadenoma that there is between a turnip and a tomato, and there is no difficulty in ordinary cases in making the differentiation.

DR. HUGH H. TROUT, Roanoke, Va.: The one factor that has contributed most to cancer results is cancer education. The percentages that Dr. Peterson and I gave include all the cases, regardless of whether the axillary glands were involved or not. Speaking of the axillary glands, we failed to mention something that is interesting to us, and somewhat important. For many years we have made serial sections of all the axillary glands in association with cancer of the breast. We have found that about 10 per cent of those which we were able to palpate do not show malignancy in serial section; 90 per cent of them do. It is rather interesting that some of these palpable glands in the axilla are not malignant. Dr. Vastine brought out an important point, one which was mentioned in the paper, and that is the absolute necessity, in order to have irradiation done properly, whether preoperatively or postoperatively, of having it done by a competent radiologist.

SURGERY IN DERMATOLOGIC PRACTICE *

GEORGE M. MacKEE, M.D.
AND
MERLIN J. STONE, M.D.
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Dermatology has evolved from a morphologic study of skin diseases and abnormalities, distinct from medicine and surgery, to the modern conception of cutaneous medicine in which the skin is considered as one of the important organs of the body in intimate physiologic relation with the general economy. This evolution has been accompanied by radical changes in diagnostic and therapeutic methods. The recognition of the relation of many morbid conditions in the skin to underlying disease processes necessitates the application and adaptation to dermatology of many of the modern diagnostic and therapeutic procedures developed in the fields of medicine and surgery during the dramatic scientific progress of the past few decades. It is therefore evident that the dermatologist of today should have a broad training in general medicine and surgery as a foundation for his special training.

From the standpoint of therapy of many cutaneous conditions, surgery in its various forms has long been and still is one of the most useful and effective procedures. Drainage of abscesses by incision and the destruction of skin lesions by cautery are described in the earliest medical literature. Failure to utilize, develop and adapt to the specialty of dermatology the spectacular scientific progress in surgery would seem to be as detrimental as to neglect any of the other valuable therapeutic agents, such as radiation therapy or chemotherapy.

Inquiry indicates that dermatopathology forms a rather meager portion of the surgeon's study of surgical pathology. In fact, dermatopathology is so slighted by the general pathologist that dermatologists have been obliged to develop this field for themselves. With few exceptions, the only authoritative experts on dermatopathology in this country are practicing dermatologists who have made a special study of this phase of pathology. A comprehensive knowledge of the pathology of the conditions treated is just as important to the physician who does cutaneous surgery as to one who operates in other fields.

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* The fields of plastic surgery and cosmetic surgery are not considered in this paper.

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* Read before the Section on Dermatology and Syphilology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

Some dermatologists do not desire to do cutaneous surgery and have not acquired training for it; but even they should be sufficiently grounded in surgery to recognize its indications and what may be accomplished by it. Not all otologists or ophthalmologists do the surgery called for in their respective special fields, but many of them do and these men are usually better trained and experienced in this work than general surgeons.

As a matter of fact, all physicians who limit their practice to dermatology and syphilology have always used some forms of surgery regularly in their practice in the office and in the clinics and will continue to do so. In textbooks on dermatology the surgical procedures of drainage of pyogenic infections, curettage, and the destruction of neoplasms and other tissue by cautery, by surgical diathermy, by electrolysis, by refrigeration and by escharotics, are not listed as surgery although the surgeon utilizes many of these procedures. Many dermatologists use the scalpel for minor operations in the office. Most of the surgery required in dermatologic practice is minor surgery which can be well performed in the office under local anesthesia provided a properly equipped surgical room is available and the dermatologist possesses surgical training and experience.

In view of the fact that surgery is and always has been an integral part of therapy in the practice of dermatology, more than casual attention should be given to it in the presentation of dermatology in medical schools and during the period of postgraduate special training. It is not uncommon to encounter physicians who have entered the specialty of dermatology with little interest and no experience even in minor surgery. Usually these men have planned early on entering the specialty and have not done any general practice. They have not had it brought to their attention that minor surgery in its various forms is used in the everyday practice of the dermatologist. Owing to lack of interest, some of these men have avoided surgical experience. As emphasized by their advisers, they have served internships in services limited to internal medicine. This is excellent preparation, as far as it goes, for the practice of dermatology, but these men now feel the lack of surgical training and experience. If not more than two years is to be spent in hospital training, it would seem that a rotating internship would form the better foundation for dermatologic specialization. This rotating service should include laboratory, medicine and surgery. Additional experience in internal medicine is naturally desirable and valuable, as is also some training in other specialties, such as pediatrics, gynecology and obstetrics. In order to be a capable guide for his patients, the specialist in any field should be familiar with the scope of the other specialties. With such broad training, his opinion in consultations is more likely to be sound. Of course, a period of general practice gives valuable practical experience which cannot be obtained in any other way.

The department of dermatology and syphilology of a clinic which makes a point of research and postgraduate teaching should have a well equipped surgical unit. By close cooperation of the surgical unit with the unit of dermatopathology aided by photographic records and follow up of the cases, valuable research may be accomplished. Gross and histologic study of excised neoplasms and other lesions, together with photographs and careful clinical studies of the patients, offers an admirable means of bringing order out of chaos in the understanding of many confusing dermatoses. Such a unit furnishes a means of increasing the knowledge of cutaneous surgery and also an opportunity for the postgraduate student to gain experience in this field. Lectures and demonstrations covering this subject should be conducted by the teaching staff and should include consideration of surgical dermatopathology, indications, technic, postoperative care of wounds, and prognosis. The postgraduate student should be given an opportunity to operate under supervision. All forms of surgery performed in the dermatologic department, such as cautery, refrigeration, electrolysis, surgical diathermy, use of escharotics, injection of varicose veins and scalpel surgery, should be performed in the surgical unit under capable supervision. Surgical procedures utilizing physical agents for the destruction or removal of tissue are probably more functions of the surgical unit than of the unit of physical therapy.

The operations indicated in dermatologic conditions come usually under the arbitrary classification of minor surgery, but this in no way lessens the responsibility of the operator. Even minor operations occasionally result in the tragedy of undesirable or serious complications, or even in the death of the patient. It follows that surgical operations should not be attempted by the dermatologist or by any other physician unless the operator possesses surgical experience and unless proper facilities are available for safe and scientific performance of the operation. The operator should be able to judge the ability of the patient to withstand the shock of the operation. He should know how to minimize shock and how to deal with the various types and degrees of circulatory disturbance, should any of these occur during the operation. This applies to operations by surgical diathermy as well as to operations performed with the scalpel.

A thorough familiarity with the use of local anesthesia together with facility in its administration is essential and is obtainable only by practice and experience. If gas anesthesia or any other general anesthesia is used in the office, it should be administered by a trained anesthetist. General anesthesia is occasionally necessary in minor operations on children and even on adults.

Maintenance of asepsis is almost as important in minor surgery as in major surgery. It is therefore mandatory that dermatosurgery in the office or clinic should be done in a properly equipped room and that sterilized supplies and instruments be available. Competent assistance is desirable for maintaining asepsis during the operation. Careful preparation of the skin and protection of the operative field by sterile sheets and towels should not be neglected.

Scalpel surgery has some advantages over other methods of dealing with certain cutaneous lesions which should logically make it the method of choice. It should always be considered when the removal or destruction of a lesion is indicated. The wounds heal more rapidly and the cosmetic result is usually better. These are important considerations, especially to the patient who deplores the time consumed and the expense necessary for numerous office treatments and dressings. The excised tissue may be studied microscopically to prove or disprove the diagnosis and to check up on the complete or incomplete removal of the lesion. Sometimes lesions that are apparently benign prove to be malignant.

We believe there is a tendency to use surgical diathermy too much as a matter of routine in the destruction of cutaneous lesions. Too often the destruction is not thorough enough or, on the other hand, there is excessive destruction of normal tissue with unnecessary scarring and prolongation of the period of healing. Often, in potentially malignant lesions, the tissue destroyed or removed is not checked microscopically for diagnosis or is so damaged by the high frequency current as to render a histologic diagnosis impossible.

In the following list are some of the many cutaneous lesions for which scalpel surgery should be considered as a method of removal even though it may not be the method of choice:

Biopsies to prove or establish diagnosis.
Benign neoplasms:
- Adenoma.
- Fibro-adenoma.
- Fibroma.
- Lipoma (circumscribed).
- Neuroma.
- Neurofibroma.
- Nevi of various types.
- Xanthoma—xanthelasma.
- Fibro-xanthoma.

Cysts of various types:
- Sebaceous cysts.
- Dermoid cysts (subcutaneous).
- Mucous retention cysts.
- Synovial cysts.

Malignant neoplasms:
- Sarcoma of various types.
- Epithelioma.
- Melanoma.

Granulomas occupying small areas:
- Lupus vulgaris.
- Tuberculosis verrucosa cutis.
- Blastomycosis.
- Actinomycosis.

Sequelae of irradiation:
- Ulcers.
- Atrophic or sclerotic tissue.
- Keratoses.
- Epithelioma.

Verruca plantaris and other verrucae.
Chronic ulcers.
Diseased or deformed toenails and fingernails.
Scars—unsightly and interfering with function.
Tattoo—small.

In addition, small plastic operations and skin grafts, especially Thiersch grafts, may be performed in the office under local anesthesia if the operator is experienced in these procedures. Keloids (large, old and thick) may be excised or pared down and recurrence prevented by subsequent roentgen or radium therapy.

The dermatologist should be experienced with all surgical methods, physical and scalpel, and with all conventional methods of treatment. In this way he will be able to select the method that offers, in his judgment, the best result in the individual case, rather than always using the one method with which he has had experience. Such choice of method will eventually lead to improved statistics. A broad training of this kind makes dermatology more comprehensive.

We believe that the surgically trained dermatologist can obtain better results in some cutaneous conditions than does the general surgeon—i. e., keloid, moles, and the like—because in order to obtain superior results in such conditions it is necessary to know clinical dermatology, dermatopathology and surgery. We predict that the dermatologist of the future will possess adequate surgical ability. It is to be hoped that the dermatologist will not make the mistake in surgery that has been made in radium therapy. He now knows that he should not attempt to treat a really malignant neoplasm with an inadequate amount of radium and with inadequate experience and equipment. Of course, major surgery will never be a part of dermatology any more than is major high voltage roentgen therapy.

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ABSTRACT OF DISCUSSION

DR. FRED WISE, New York: The various points brought out by Drs. MacKee and Stone are so clear-cut and obvious that only an elaboration of their views is indicated in a discussion of the subject. To keep pace with the rapid advances in the practice of dermatology, the successful dermatologist of today must evidently be "on his toes" from dawn to midnight. It must be borne in mind that a great many of the routine therapeutic procedures in offices and clinics are pure surgical operations which have become commonplace only through familiarity and constant repetition. I am thinking particularly of intravenous and intramuscular injections, curettage, electrolysis, monopolar desiccation, and the like. These are all relatively simple operations, but they all require knowledge and skill of a high order. The removal of tissue for microscopic examination, especially from the mouth and the genital regions, and from the vicinity of the eye, must never be relegated to the inexperienced youngster with an excess of confidence in his skill. This refers especially to work in clinics, where younger men should be on probation until they acquire a sufficient amount of experience in minor surgical technic. We have established a rule at our clinic, calling for experience on the cadaver, in the technic of cisternal puncture, before permitting this operation to be carried out on our patients, and I think it is a wise rule and that it should apply as well to spinal puncture technic. The injection treatment of varicose veins is being taken up more and more by dermatologists, chiefly because of our frequent contact with varicose eczemas, ulcers, and chronic lichenification of the legs. I need not emphasize the fact that this type of work should never be undertaken by any one who is not possessed of considerable skill in minor surgery, as unskilled work may result in grave consequences. The surgical treatment of malignant lesions especially of the face, and particularly near the eye and the lips, calls for a well grounded and thorough knowledge of minor surgical technic. If undertaken by the unskilled, ectropion of the eyelids and distortion of the mouth may often result. With regard to the surgical treatment of melanotic lesions, I believe that the responsibility should always be shared with one or more surgeons of recognized ability and sound judgment. These lesions belong on the borderline between minor and major surgery.

DR. JOSEPH R. GRINDON, St. Louis: Some of our members whose brains extend to the tips of their fingers can probably do surgical work effectively in dermatologic cases. Most of us, however, who are not using the strict surgical precautions every day, and who have not the opportunity to keep in training, should let these things alone. I believe this is a very good rule.

DR. EVERETT S. LAIN, Oklahoma City: The authors are to be complimented for calling attention to the fact that the successful dermatologist should be trained in minor surgery. In recent years he has made great progress in radiotherapy, which has brought him in touch with superficial malignant growths. The dermatologist has realized that many of these lesions need both irradiation and surgery. Drs. MacKee and Stone have well called attention to those cases in which surgery is indicated. I wish merely to emphasize the work that dermatologists are now doing with the late models of the endotherm machines or bipolar diathermy. This technic is considered applicable to many of those lesions needing both radiotherapy and surgery. The machines are convenient and rapid in operation and as a rule their use results in an almost bloodless field. This technic is being used only after proper irradiation with radium or roentgen ray. I would further emphasize the precautions mentioned by Dr. Wise regarding melanomas. I consider that this type of tumor should always be treated surgically. I favor some form of coagulative treatment, either the surgical diathermy or bipolar coagulation. The principal disadvantage

of such treatment is the slowness of healing. In some instances the sutures do not hold because of the extensive devitalization of tissue that results in retraction and delayed healing. Experience has shown that, through the use of nonabsorbable sutures placed far back from the border, satisfactory healing can be obtained. This difficulty, I understand, is now being overcome by a machine that does not devitalize the tissues for more than 1 mm. from the incision.

DR. F. J. EICHENLAUB, Washington, D. C.: Some of the rectal anesthetics are very satisfactory to use for some of the operations about the mouth, particularly carcinoma of the tongue. They displace chloroform and ether and gas, which does not give relaxation, and good work can be done with such an anesthetic.

DR. WALTER J. HIGHMAN, New York: I hope that dermatologists will become the kind of surgeons Drs. MacKee and Stone pointed out, but I should hate to see surgeons become dermatologists. Surgery of the skin began modestly in the boudoir with a lady, an acne pustule and a needle. Today dermatology is largely a matter of relieving skin disturbances by any methods we can master. One of the methods is minor surgery in all its ramifications, including elaborate machinery and modest escharotics in the chemical group. Obviously, it is necessary to master this type of therapy, just as much as I believe a chauffeur should understand the method of getting his car going on the road when there is no sign of a service station. I agree with the authors that the dermatologist of the future should be as capable a surgeon as he must be a chemist and a pathologist. In spite of my fulmination against the mechanistic era I still concede that machinery has virtue, as much as endocrinology, for example, and I wish enthusiastically to endorse what Drs. MacKee and Stone pointed out, that the time is over when a fountain pen, a prescription pad and Latin terminology are sufficient for the entire dermatologic approach to patients suffering from skin diseases. I am entirely in accord with the surgical point of view that has been advocated by the authors.

DR. GEORGE M. MACKEE, New York: I agree with Dr. Wise as to the advisability of a consultation before treating melanoma, but only because of medicolegal protection—division of responsibility—as in many other diseases and branches of medicine. I think that the dermatologist should be, and eventually will be, just as capable, if not more so, of removing a melanoma by scalpel surgery or surgical diathermy as is the general surgeon. A great deal is heard about the necessity for enormously extensive excisions in the case of malignant and potentially dangerous lesions. I have seen lesions the size of split peas removed by excising an area the size of an adult hand. Accurate judgment is called for here—judgment based on a knowledge of cutaneous pathology, clinical dermatology and the principles of surgery. Of perhaps greater importance is the depth of the excision. The pathologic cells often, even in a clinically superficial lesion, extend downward and outward along nerves and vessels to the muscle; therefore, the excised tissue should be roughly triangular, with the blunt apex of the triangle upward. Another reason why we believe that adequately trained dermatologists are better able to handle the many dermatosurgical conditions is illustrated by keloid and hypertrophic scars. Few surgeons know how to treat these conditions. Most surgeons believe that hypertrophic scars are due to tension. Many of them are due to this cause and some of them will disappear spontaneously regardless of the cause. However, many hypertrophic scars will not improve without proper treatment. Such lesions can be greatly improved and keloids can be prevented by using radium or the roentgen ray at the proper time. Very thick keloids often cannot be eliminated with an amount of radiation that can be judiciously administered. The properly trained dermatologist will excise the lesion with scalpel surgery if it is of suitable size and location. If the lesion is extensive and thick, he will pare it down with a scalpel or with surgical diathermy. Finally, he will employ radium or the roentgen ray at the proper time and in the proper manner to avoid recurrence. It should be emphasized that those not surgically trained should not attempt scalpel surgery. I predict that in the future most if not all surgery that can be called dermatosurgery will be performed by dermatologists.

ROENTGENOLOGY OF THE UPPER RESPIRATORY TRACT

WITH ESPECIAL REFERENCE TO THE LARYNX AND ADJACENT STRUCTURES *

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The upper respiratory tract, from the nasopharynx to the carina, has recently become a very important field for roentgenologic diagnosis. The most important factor in diagnosis is a careful study of the soft structures during an examination of the neck. This includes fluoroscopic observations of the movements or changes in lumen of the various portions of the tract during respiration, speech and swallowing, and the making of roentgenograms for records. In all instances the chest should be included, and especially in infants and young children.

It seems strange that, following Scheier's studies of speech mechanism in 1909 [1] and of the swallowing act in 1911,[2] the publication of Thost's beautiful atlas [3] recording his observations on the normal and pathologic larynx in 1913 and Iglauer's [4] pioneer work in this country in 1914, the subject of diagnosis of diseases of the upper respiratory tract by roentgen methods should have lain almost dormant for several years, at least in America. Sporadic articles have appeared more recently on different phases of roentgenology of the upper respiratory tract or the neck, as by Pfahler [5] on the thyroid, Iglauer and Ransohoff [6] and Tucker [7] on retropharyngeal abscess, Manges [8] on nonopaque foreign bodies in the trachea, Barclay [9] on phonation, and more recently by Hickey [10] and Brown and Reineke [11] on the general examination of the cervical portion of the respiratory tract. The first collective studies of the entire upper air passages and the soft tissues of the neck seem to have been made by Hay [12] from the normal and pathologic material in our department. Since the beginning of Hay's work, the members of our staff have realized that the only way of determining accurately the potential dangers of the thymus in infancy is through a study of its effects on the upper respiratory tract and not by an estimation of its dimensions.[13]

* From the Department of Roentgenology, University of Pennsylvania Medical School.

* Read before the Section on Laryngology, Otology and Rhinology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

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In all examinations of the neck, fluoroscopy is the first procedure. The eyes should be accommodated first until it is possible to see the ventricles of the larynx. After a general survey of the region with the head in the midposition, the patient is directed to pronounce certain vowel sounds, and the changes in the appearance of the ventricles are noted. The air-containing, zeppelin-shaped cavity of the ventricles should be shown clearly if the larynx is normal. Seeing it without deformity practically excludes any severe inflammatory condition in the larynx and any growth in the region of the cords. If it is not visible, one is justified in assuming the presence of a growth, inflammatory process or paralysis of the vocal cord.

The next observation should be made of the arytenoid cartilages, which move with speech and change their relations with swallowing. They are seen easily in the normal subject because they are well surrounded by air. Being under control of practically the entire musculature of the larynx, and subject to lateral and sagittal movements, they will vary considerably in appearance and position in roentgenograms; hence fluoroscopic observations of their movability and configuration are necessary in the final interpretation. They may appear thick or thin and clean cut under different circumstances.

The lumens of the pharynx, pyriform sinuses, vestibule of the larynx and the trachea should be carefully noted. All of the structures so far mentioned are seen easily if the eyes are properly accommodated. They are always recorded in the final roentgenogram (fig. 1).

The next procedure is a study of the swallowing mechanism, for the determination of the integrity of the motor mechanism of the pharynx, larynx and upper esophagus; the movability of the epiglottis, arytenoids and the entire larynx; the outlining of growths on the tongue, in and around the epiglottis, the pyriform sinuses and the upper esophagus, and, finally, the patulousness of the food passage. Before studying the swallowing act, one should note particularly the relations between the arytenoids and the epiglottis, the position of the latter and the level of the larynx. Ossification is a great aid in making the larynx visible, and in persons as young as 17 or 18 years, the beginning centers in the posterior ring of the cricoid may be seen.

On the basis of the observations of my colleagues and myself we have divided the swallowing act into five stages, as follows:

1. Preparation for the act. The mouth is seen filled with the opaque liquid mixture. The base of the tongue moves back toward the postpharyngeal wall.

2. As the opaque mixture begins to enter the pharynx, the base of the tongue moves back farther and pushes the epiglottis back slightly. Coincidentally, the larynx rises and the arytenoids come in contact with the under surface of the edge of the epiglottis. We have concluded that the tongue and not the food bolus causes the slight backward tilt of the epiglottis.

3. The peak of the act. As the pharynx becomes filled, the oropharynx is completely obliterated, the larynx is elevated still farther and the arytenoids and epiglottis cannot be differentiated. The hyoid bone is considerably raised.

4. The food has passed into the esophagus and the pharynx and pyriform sinuses are empty. The larynx has descended slightly and the arytenoids have separated from the epiglottis, which has raised to its normal position. The hyoid bone has descended.

5. The swallowing act is completed and all of the structures have returned to their normal relations.

Fig. 1.—Normal neck of a woman, aged 29: 1, soft palate and uvula; 2, posterior border of tongue and pharynx; 3, epiglottic vallecula; 4, hyoid bone; 5, epiglottis; 6, aryepiglottic folds, with pyriform sinuses behind and below; 7, vestibule of the larynx; 8, arytenoids; 9, ventricular bands; 10, ventricles; 11, vocal cords, partly overshadowed by the cricoid; 12, trachea.

Fig. 2.—Normal neck of a woman, aged 45, showing well marked ossification of the laryngeal cartilages: 1, thyroid cartilage; 2, arytenoids, showing articulation of one with the cricoid; 3, cricoid, wide posteriorly, and partly covered by lower border and lower cornu of thyroid.

Fig. 3.—Early carcinoma of vocal cord, junction of anterior and middle third, projecting upward into the ventricular space. (Could be seen by fluoroscope.) The outlines of the ventricles are hazy. Confirmed by endoscopy and removed. Biopsy, early carcinoma. Chief complaint, hoarseness for eight months. (Referred by Dr. Tucker.)

We have observed the foregoing phenomena fluoroscopically and have been able to record the stages by roentgenograms. The opaque mixture used has been a thin suspension of bismuth, just thick enough to cast a perceptible shadow and not to obscure the various structures that should be studied. The soft, pliable wafer employed by Scheier [2] has not been tried, but its use is contemplated in order to observe any possible differences in details of the mechanism that may depend on boluses of different consistencies. Sometimes it is advantageous to use a bismuth capsule in order to study abnormalities of the swallowing act.

After the fluoroscopic study has been completed, a lateral roentgenogram of the neck is made, and the exposure is timed to occur during phonation of a vowel sound. I had always used the vowel E until Dr.

Hickey [14] convinced me that the ventricles could be shown to better advantage during the phonation of A. If any abnormalities of the swallowing act or any evidences of an extrinsic lesion or an advanced intrinsic laryngeal lesion have been noted or suspected fluoroscopically, another lateral roentgenogram is made after the swallowing of a small amount of opaque liquid or a bismuth capsule, according to the special indications. The roentgenograms are interpreted in conjunction with the recorded fluoroscopic observations.

After one has become thoroughly familiar with normal fluoroscopic and roentgenographic appearances it is possible to apply this knowledge to the detection of a large number of pathologic conditions involving the upper respiratory tract, the esophagus and the soft tissues of the neck. There are so many conditions that can be detected that this presentation must be limited to the larynx.

THE NORMAL LARYNX

In the roentgenograms of the normal neck (fig. 1) the following structures should be recognized readily: the soft palate, posterior border of the tongue, epiglottis and vallecula, pharynx, pyriform sinuses and the retropharyngeal, retrolaryngeal and retrotracheal soft tissue spaces. In connection with the larynx directly, one should see the vestibule, arytenoids, aryepiglottic folds, ventricular bands and the ventricles. All paired structures are superimposed. The upper border of the shadow of the vocal cords should be visible, but their lower portions are usually obscured by the cricoid cartilage. The thyroid and cricoid cartilages often can be differentiated without ossification, but its presence aids considerably. Ossification was first studied extensively by roentgenographic means by Fraenkel,[15] in 1908. It is readily shown at the earliest stages and there is no reason why present textbook anatomic knowledge of this subject should not be checked up by extensive roentgen examinations of a large number of living subjects. The trachea is always easily seen.

14. Hickey, P. M.: Personal communication to the author.
15. Fraenkel, E.: Ueber die Verknöckerung des menslichen Kehlkoffs, Fortschr. a. d. Geb. d. Röntgenstrahlen **12**: 152-168, 1908.

Tumors of the Larynx.—There are five appearances by which laryngeal neoplasms may be recognized. These may be summarized as follows:

1. Direct evidence of a localized nodule encroaching on the air space of the vestibule, ventricles or subglottic region (figs. 3 and 4). Benign tumors are usually clean cut in outline and distinctly localized, whereas malignant growths are hazy and fade off gradually into the surrounding structures, which also are hazy, as the result of infiltration, edema or inflammatory reaction.

2. Obliteration of the ventricles. Inability to demonstrate the ventricles implies either a growth, inflammatory condition or paralysis of a vocal cord and calls for a laryngoscopic examination (fig. 5).

3. Irregularity, haziness or change in direction of the normally clean cut horizontal line at the lower border of the larynx (figs. 1 and 5). A change in the direction of the line must not be confused with the slant of a visible lower border of the cricoid cartilage.

4. Complex changes in appearance due to extensive growths. These may be various encroachments on the air spaces, thickening of structures, defects due to destruction of tissue, distortions and displacements (figure 6).

5. Infiltration of cartilage. This cannot be determined unless there is extensive ossification, which, however, is usually irregular and deceptive. One is never justified in interpreting erosion unless the adjacent soft tissues are swollen and hazy. We have rarely felt justified in interpreting it.

Fig. 4.—Pedunculated benign tumor of vocal cord, encroaching on the lumen of the trachea. Confirmed by endoscopy and removed. Biopsy, benign tumor. Chief complaint, hoarseness for two years. (Referred by Dr. Jackson.)

Fig. 5.—Carcinoma of vocal cord. Encroachment on air space below the larynx and absence of ventricles. Endoscopy, extensive infiltration and ulceration involving right cord. Biopsy, squamous carcinoma. Hoarseness one year, weight loss and recent dyspnea. (Referred by Dr. Jackson.)

Fig. 6.—Extensive carcinoma involving the soft palate, 1; base of tongue, vallecula and epiglottis, 2; postpharyngeal wall on one side, pyriform sinus, 3; arytenoids, extending down farther into larynx, with obliteration of ventricles. This diagnosis was made before the extent of the lesion was known clinically. Biopsy, squamous carcinoma. Patient consulted physician because of swelling in neck. (Referred by Dr. Muller.)

Paralysis of the Vocal Cords.—In every case with paralysis of the vocal cord examined in our clinic with a view of making a diagnosis of a laryngeal condition there has been observed some deviation from the normal in the appearance of the ventricles (fig. 7). The following different appearances have been noted:

1. Half zeppelin shape, the lower half being obliterated. A similar appearance is sometimes noted in normal individuals in whom the cricoid is dense, but the half space is wider than in paralysis of the cord.

2. The zeppelin shape can be made out, but the posterior half of the space is closed on one side by a contraction upward of the lower part of the posterior portion. In both of these types the borders of the space are clean cut, and not hazy as when the deformity is due to growth.

3. Complete obliteration of the space. In such cases the appearance cannot be distinguished from an inflammatory condition or a growth.

Cases of bulbar paralysis present interesting phenomena which will usually lead one to suspect the condition after a study of the movements of phonation and swallowing. There is not found any local evidence of disease or neoplasm, so that the diagnosis is to be made by exclusion. In connection with paralysis of the cord, it has not been possible to identify any of the appearances found with any particular form of involvement of the nerves. The arytenoids do not seem to show any characteristic appearance, location or disturbance in movements.

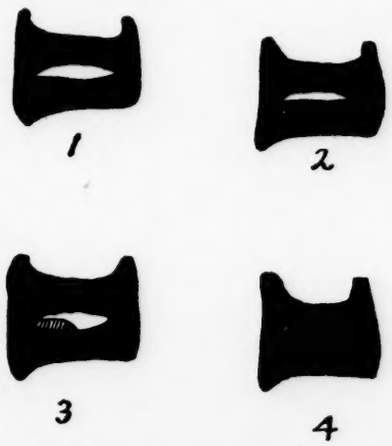


Fig. 7.—Various appearances of the ventricles in vocal cord paralysis: 1, the zeppelin shaped normal ventricles; 2, the half zeppelin shape noted in some cases; 3, contraction of the lower part of the posterior portion on one side; 4, complete obliteration.

Inflammatory Conditions.—These include acute laryngitis, streptococcic laryngitis, acute laryngeal diphtheria, postdiphtheritic stenosis, posttyphoidal perichondritis, syphilis and tuberculosis.

In severe acute laryngitis, the outlines of the air spaces are hazy and the ventricles may be obliterated. In one case of streptococcic laryngitis there was obliteration of the ventricles, haziness of the arytenoids and a general blurring of the outlines of the vestibule.

A single case of acute laryngeal diphtheria showed swollen arytenoids, retrolaryngeal swelling, obliteration of the ventricles and narrowing of the upper end of the trachea. The differentiation between the three conditions just mentioned is not clean cut, and the best one can do in children is to render a diagnosis of an inflammatory condition requiring direct laryngoscopy.

The presence and extent of postdiphtheritic stenosis is always well demonstrated by fluoroscopy and roentgenograms. There is obliteration of the ventricles and narrowing of the vestibule of the larynx. The characteristic feature is the narrowing or complete obliteration of the lumen of the upper trachea, which becomes either the shape of an inverted funnel, narrowed down almost to a point or entirely shut off for some distance below the larynx. The loose tissue in the conus elasticus from the cords to the first tracheal ring is the seat of the most intense inflammatory reaction and subsequent contraction, and there may be a perichondritis of the cricoid; hence the seat and appearance of the stenosis (fig. 8).

In one case of posttyphoidal stenosis of the larynx there was an absence of the ventricles and disturbed motility of the arytenoids with general blurring of the outlines. Endoscopy showed perichondritis of the larynx and fixation of the left arytenoid. This case did not have the typical appearance of the upper trachea seen in postdiphtheritic stenosis, and there was nothing really characteristic of the condition.

In the many cases of tuberculous and syphilitic laryngitis studied nothing was found that could be regarded as characteristic of the disease or differing from the appearances of many malignant growths. Roentgenologic evidence of pulmonary tuberculosis will have an important bearing on the diagnosis.

SPEECH MECHANISM FOLLOWING LARYNGECTOMY

Through the courtesy of Dr. Fielding O. Lewis, the speech mechanism of two cases following some time after laryngectomy for carcinoma was studied in our clinic. The following mechanism in the first patient was observed fluoroscopically and recorded roentgenographically, as previously reported in detail: [12]

First stage, filling of the pharyngeo-esophageal reservoir with air.

Second stage, fixation of the muscles of the pharynx and upper esophagus. The cricopharyngeus appeared as a distinct band at the lower end of the space and separated the upper cavity from the esophagus.

Third stage, firm contraction of the cricopharyngeus at the beginning of speech, which consisted in counting from one to eight, and a decrease in size of the reservoir.

Fourth stage, complete collapse of the reservoir at the count of eight and exhaustion of all available air.

The second case presented essentially similar phenomena, although the procedure differed somewhat in minor details. He did not fill the reservoir so full of air, but could keep up a continuous supply and was able to talk continuously by taking air in through his nose. He did not, therefore, present the definite stages of the first case. There were, in addition, certain psychologic elements in the technic of more importance to the individual than of scientific interest or, perhaps, of necessity.

Fig. 8.—Complete postdiphtheritic stenosis of larynx and upper trachea.

CONCLUSIONS

The portion of the upper respiratory tract in the neck has been a neglected field for roentgenologic study.

Practically all of the pathologic conditions presented by the larynx and neuromuscular disturbances show some recognizable phenomena or abnormal appearances, many of which are characteristic.

The examination must be both fluoroscopic, for studying moving parts, and roentgenographic, for purposes of record and finer details.

The study of phonation and the swallowing act is essential in all cases. Both of these functions are described.

3400 Spruce Street.

THE DIAGNOSIS OF LARYNGEAL DISEASE

LARYNGOSCOPIC APPEARANCES CORRELATED WITH ROENTGENOLOGIC OBSERVATIONS *

CHEVALIER LAWRENCE JACKSON, M.D.
PHILADELPHIA

Hoarseness, the most common symptom of laryngeal disease, always calls for careful diagnostic study. Too often patients with this complaint are sent away with a casual diagnosis of "laryngitis." As a result, the patient with early and easily operable cancer, or incipient tuberculosis, is allowed to go on for months without an accurate diagnosis and appropriate treatment.

The complaint of hoarseness calls for the following diagnostic studies:

1. A complete history.
2. Mirror laryngoscopy.
3. Roentgenographic study of the neck and chest, and in most cases also of the sinuses.
4. Complete general physical examination with particular attention to the chest.
5. Blood Wassermann test.
6. Sputum analysis.
7. Direct laryngoscopy (if indicated).
8. Biopsy (if indicated).

After the taking of the history, the first step in the diagnosis of laryngeal disease is to look at the larynx. This can be accomplished by the indirect method in almost all adults and older children. If the mirror view is satisfactory, it may or may not be necessary to do a direct laryngoscopy in addition. A satisfactory mirror view will usually justify a tentative diagnosis. Laryngoscopic appearances may be quite characteristic in such conditions as cancer, tuberculosis, benign neoplasms, vocal nodules, or recurrent paralysis. In almost all cases, however, this diagnosis must be regarded as only a tentative one, and further studies carried out.

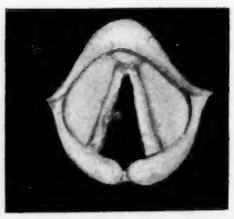


Fig. 1 (case 1).—Small growth on right vocal cord.

Fig. 2 (case 2).—Growth attached to anterior half of right cord.

Of these, one of the most helpful is the roentgenographic examination. The roentgen ray has for a long time been of the greatest help in laryngeal diagnosis, by showing the presence or absence of tuberculous disease in the chest, and, in cases of laryngeal paralysis, by showing an aneurysm, subternal goiter, mediastinal neoplasm, or other lesion involving or pressing on the recurrent laryngeal nerve. The recent work of Pancoast and Pendergrass has developed the roentgenology of the neck to such a degree that the fluoroscopic and roentgenographic study of the larynx itself is of the greatest importance in diagnosis.

* Read before the Section on Laryngology, Otology and Rhinology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

REPORT OF CASES

The cases discussed in this paper were selected from a series studied in consultation with Dr. Pancoast. The laryngoscopic appearances illustrated are those seen on indirect examination. In a number of the cases direct laryngoscopies were subsequently done, for biopsy or for treatment. I am indebted to Dr. Gabriel Tucker for access to some of the clinical material.

BENIGN NEOPLASMS

CASE 1.—D. P., a woman, aged 32, complained of hoarseness of two months' duration. Mirror laryngoscopy showed a small growth on the right vocal cord. Roentgenographic examination showed the shape of the ventricle of the larynx to be abnormal, "suggesting a monolateral laryngeal lesion." The blood Wassermann reaction was negative. Direct laryngoscopy was done for the removal of the growth, which on histologic examination was proved to be benign in character.

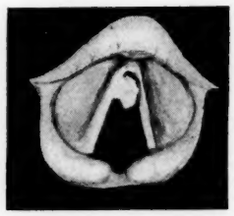


Fig. 3 (case 3). — Irregular growth in anterior commissure, attached to right cord.

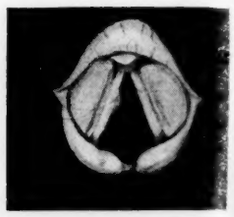


Fig. 4 (case 4).—Irregularity of surfaces of right cord, with mass attached to free margin of right cord at junction of anterior and middle thirds.

CASE 2.—W. M., a man, aged 36, complained of hoarseness of ten years' duration. Mirror examination showed a growth attached to the anterior half of the right cord. Roentgenographic study showed obliteration of the ventricle. The blood Wassermann reaction was negative. This growth was removed by direct laryngoscopy and microscopic examination showed it to be a soft fibroma.

CASE 3.—C. S., a woman, aged 27, complained of hoarseness of about eight months' duration, and some loss of weight. Mirror laryngoscopy showed an irregular pinkish growth in the anterior commissure, apparently attached to the right cord. The growth was removed by direct laryngoscopy, and the pathologist reported it to be an angiomatous polyp.

CASE 4.—K. C., a man, aged 62, dated symptoms from a "heavy cold," eight months before. There was a previous diagnosis of papilloma, and several unsuccessful efforts had been made to remove it. Mirror laryngoscopy showed considerable irregularity of the surfaces of the right cord. An irregular mass the size of a coffee-bean was attached to the free margin of the right cord at the junction of its anterior and middle thirds. Roentgenographic examination of the larynx showed a small growth on the vocal cord at the junction of its anterior and middle thirds, as indicated by encroachment of a mass of soft tissue on the lumen of the ventricle. General physical examination by Dr. Kern showed nothing abnormal except for slight generalized adenopathy. The blood Wassermann reaction was negative. Direct laryngoscopy was done and a specimen taken for histologic examination. There was some suspicion of early malignant changes, and the patient was asked to return in one month. He did so and another specimen was taken, which showed only inflammatory reaction. The appearance of the lesion had greatly improved. The patient was instructed to keep his larynx under the close observation of his physician and to avoid all forms of vocal abuse.

CANCER

CASE 5.—C. G., a man, aged 41, dated hoarseness back about one year. There was a complaint also of "dull pain in the throat." The patient thought his trouble followed a "cold." Huskiness of voice persisted in spite of medication. Mirror examination showed a small irregular tumor mass just under

the edge of the left vocal cord. Roentgenographic study of the neck showed an inflammatory or neoplastic process in the region of the larynx. The ventricles of the larynx were not visible. The diagnosis of cancer was subsequently confirmed by biopsy, and a laryngofissure performed.

CASE 6.—M. H., a man, aged 64, complained of hoarseness for the past two months and a slight feeling of soreness in the throat. Mirror examination showed a lesion involving the entire left cord. It was rather pale and showed an irregular ulcerated surface. The motility of the left cord seemed slightly impaired. Roentgenographic study of the neck showed absence of the ventricle, suggesting infiltration from a growth in that region. On physical examination, Dr. Perry Pepper found the patient in excellent general condition. The blood Wasserman reaction was negative. Direct laryngoscopy showed the lesion to extend well back to the posterior commissure, and slightly subglottic. A specimen was removed for biopsy, and the pathologist's report was squamous epithelioma. Laryngectomy was performed, as the lesion was too extensive for laryngofissure.

CASE 7.—E. E., a man, aged 45, complained of hoarseness of three years' duration. Operation had been advised a number of times, but the patient had refused. He now became alarmingly short of breath. Mirror examination showed a large irregular mass beneath the epiglottis, extending entirely across its base and overhanging the glottis. The mucosa covering the mass was ulcerated and bleeding. There was no impairment of the motility of the arytenoids. Palpation of the neck showed the contour of the larynx to be irregular, and there was a soft bulging over the cricothyroid membrane. Roentgenography of

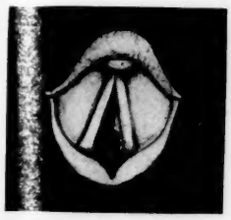


Fig. 5 (case 5).—Small tumor mass just under edge of left vocal cord.

Fig. 6 (case 6).—Lesion involving entire left cord.

the neck showed swelling of the soft tissues in front of the thyroid cartilage. There was obliteration of the ventricle, and an irregularity in the density of the thyroid cartilage, suggesting infiltration from a growth or inflammatory process. The blood Wassermann reaction was negative. Direct laryngoscopy was done and ample specimens were removed for biopsy. The pathologist reported squamous epithelioma.

TUBERCULOSIS

CASE 8.—J. R., a man, aged 51, complained of difficulty in swallowing, and pain in the throat. Mirror laryngoscopy showed an ulcerative lesion on the internal surface of the tip of the left arytenoid, about half the size of the little finger nail, with an infiltrative base. The surface was pale and granular. Roentgenographic examination of the chest showed extensive infiltration, with some cavitation in both upper lobes. The trachea was retracted to the right. Roentgenographic study of the neck showed abnormality in the region of the larynx also, and a diagnosis of pulmonary and laryngeal tuberculosis was made. The blood Wassermann reaction was negative. In the absence of positive sputum it was thought advisable to remove a specimen for biopsy. This was done by direct laryngoscopy, and the pathologist reported chronic inflammatory tissue with tubercles containing giant cells, though special staining of the tissue for tubercle bacilli gave negative results.

CASE 9.—J. M., a man, aged 33, developed pulmonary tuberculosis, with positive sputum, about two years before I first saw him. He had had hoarseness for about ten months. Mirror laryngoscopy showed an ulcerative lesion involving the posterior commissure and extending forward on both cords, for approximately their posterior thirds. There seemed to be no impairment of motion of the arytenoids. The local appearances had the characteristics of a tuberculous lesion. Roentgenographic examination showed an infiltrative inflammatory process in the region of the larynx, and a diffuse infiltration through both lungs, especially the upper lobes. The diagnosis was pulmonary tuberculosis with secondary involvement of the larynx.

SYPHILIS

CASE 10.—B. C., a woman, aged 44, was severely dyspneic when admitted to the hospital. This attack was only of two days' duration, but there had been previous attacks. Mirror

Fig. 7 (case 7).—Mass beneath epiglottis, overhanging the glottis.

Fig. 8 (case 8).—Lesion on internal surface of tip of left arytenoid.

laryngoscopy showed the left cord to be almost motionless, and in the subglottic region, just below the left cord, there was a red swelling. The airway was markedly reduced. Roentgenography showed a definite narrowing of the airway just below the ventricle of the larynx, as well as increased width of the upper portion of the post-tracheal space. The blood Wassermann reaction was strongly positive and the diagnosis was syphilitic perichondritis. Tracheotomy was performed for the relief of dyspnea and antisyphilitic treatment begun. The patient was subsequently decannulated.

PARALYSES

CASE 11.—A. G., a man, aged 57, had been annoyed for fifteen months by a sensation of "lump in the throat." The onset was very vague. At times he had pain on swallowing. Mirror laryngoscopy when the patient was first seen was negative. On fluoroscopic study, slight hesitation of the opaque capsule was noted at the level of the suprasternal notch. Physical examination by Dr. George M. Piersol showed the patient to be in quite good general condition. The blood Wassermann reaction was negative. Mirror examination a short time later showed posticus (abductor) paralysis of the right vocal cord (fig. 11 *A*), and direct examination of the hypopharynx and esophagus was advised. At direct examination the larynx was lifted forward with an adolescent laryngoscope, and an ulcerat-

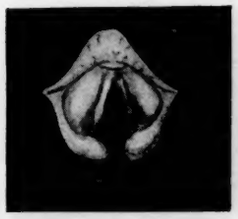
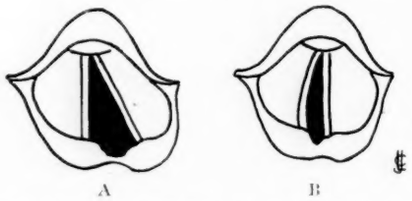


Fig. 9. (case 9).—Lesion involving posterior commissure and extending forward on both cords.

Fig. 10 (case 10).—Left cord almost motionless; in subglottic region, just below the left cord, a red swelling.

ing, fungating mass was found on the posterior esophageal wall, just back of the cricoid cartilage. A specimen of tissue was removed for microscopic examination and the pathologist reported squamous epithelioma. Roentgenography showed an increased retrotracheal space. The patient finally developed a bilateral cord paralysis, requiring tracheotomy. The drawing (fig. 11 *B*) shows that the right cord has become cadaveric, while a posticus (abductor) paralysis of the left cord has developed in addition. (Both *A* and *B* show the glottis on full inspiration.)

CASE 12.—M. R., a man, aged 59, had been having some difficulty in swallowing solids for about six months and had lost some weight. Mirror laryngoscopy at this time was negative, and no abnormality was found on palpation of the neck, except tenderness on pressure over the trachea just below the cricoid cartilage. Fluoroscopic study showed lodgment of the opaque capsule just below the level of the suprasternal notch, and the capsule was not dislodged until after many swallows of water. The thick paste was moderately obstructed in passing the suprasternal notch, but the liquid mixture passed readily. There was slight dilatation of the esophagus above the obstruction. There was also distinct retrotracheal swelling, and a moderate compression stenosis of the trachea at the level of the suprasternal notch. There was an "eccentric constricted channeling of the esophagus" for a distance of 6 cm. in its upper third. On esophagoscopy a bleeding mass was found obstructing the lumen



A B

Fig. 11 (case 11).—Glottis on full inspiration: *A*, posticus (abductor) paralysis of right vocal cord; *B*, right cord cadaveric, with posticus (abductor) paralysis of left cord.

of the esophagus just below the cricopharyngeal pinchcock. A specimen of tissue was removed, and the pathologist confirmed the diagnosis of squamous carcinoma.

The patient was discharged, high voltage roentgen therapy being advised. The patient did not have this carried out, but two months later he returned with a left recurrent paralysis, and increased difficulty in swallowing.

CASE 13.—J. C., a man, aged 61, complained chiefly of dysphagia of about one year's duration, but he complained also of strangling attacks and difficulties of speech. The family physician had suggested the diagnoses of small aneurysm of the descending aorta, thyroid neoplasm, or mediastinal growth. Mirror laryngoscopy showed marked impairment of motion of the left cord, which seemed slightly crescentic. The right cord was also somewhat sluggish, and its movements seemed incoordinate. Roentgenography showed slight dilatation of the

Fig. 12.—Left recurrent paralysis (glottis shown on full inspiration).

Fig. 13 (case 13). — Impairment of motion of left cord; right cord sluggish, its movements seeming incoordinate.

aortic arch. A blurring of the ventricles of the larynx was noted of such character as would be explained by a paralysis of the vocal cords. The blood Wassermann reaction was negative. Neurologic examination by Dr. Spiller led to a diagnosis of progressive spinal muscular atrophy developing into bulbar palsy. Esophagoscopy showed no organic lesion in the esophagus and no esophageal compression.

CONCLUSION

This series of cases demonstrates the value of fluoroscopic and roentgenographic study of the neck in the diagnosis of laryngeal lesions. The roentgenologist can now detect inflammatory and neoplastic processes in their incipience, when they are causing only the mildest symptoms.

235 South Fifteenth Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PANCOAST AND JACKSON

DR. SAMUEL IGLAUER, Cincinnati: I think Drs. Pancoast and Jackson are to be congratulated on the thoroughness with which they investigated the subject, and especially on the fluoroscopic studies. Dr. Pancoast has brought out not only the anatomy of some of the lesions but also the physiology of these parts. The question of ossification in the larynx is important because the roentgenologist who is not familiar with the subject will often state that there is a foreign body behind the larynx when what is really shown is ossification of the cartilage. According to the studies of Scheier, ossification follows a definite course. Ossification first appears in the thyroid cartilage at the age of 18; later the cricoid begins to ossify; the tracheal cartilages are the last to ossify. A study of ossification is also important if one is going to perform laryngofissure, since one knows in advance whether one is going to cut through bone. The x-rays are of value in studying laryngotracheal stenosis, usually revealing a narrowed air column in the obstructed portion of the larynx or upper part of the trachea. The narrowing of the lumen can sometimes be delineated to better advantage by the injection of iodized oil into the larynx. When the patient wears a tracheal cannula, the stenosis may also be demonstrated by pulling a rubber sausage containing an opaque medium into the larynx above the cannula. The x-rays are of value also in showing the position of intubation tubes or permanent rubber dilators introduced for treatment and also in the instruction of students in the use of intralaryngeal instrumentation. In a case of congenital laryngocele I was able to demonstrate the distended air sac in the neck when the patient made forced expiratory efforts. Swellings encroaching on the lumen of the larynx or trachea, such as retropharyngeal abscess, are readily demonstrated by the x-rays and are of considerable importance in the diagnosis and control of treatment of these conditions. A sign of great value in perforation of the esophagus or pharynx is the presence of clear spaces in the swollen area. These air bubbles can often be demonstrated by the x-rays without the presence of any palpable emphysematous crackling at the root of the neck. While it may be impossible to diagnosticate by x-rays a particular disease such as tuberculosis of the larynx, nevertheless the x-ray film will usually show more involvement of the underlying perichondrium and cartilage than one would expect from the ordinary laryngeal examination.

DR. WILLIAM V. MULLIN, Cleveland: The cases that are most troublesome to me are those in which I am unable to arrive at a correct diagnosis at the first examination. Many patients come from a distance and sometimes fail to return for subsequent study, so that a prompt diagnosis is urgently needed. At one time I believed that laryngeal tuberculosis could be diagnosed by the x-rays. Dr. Pancoast says that it is not possible to demonstrate this condition roentgenographically, and doubtless he is correct. In an army hospital for tuberculosis we had roentgenograms made in several hundred cases. Our idea at that time was that tuberculous infiltration starts at the bottom of the laryngeal tissue next to the cartilage and travels to the surface, and we believed we could see these densities and infiltrations coming to the surface. We were not able, however, to confirm our observations by postmortem or pathologic examinations. Dr. Pancoast says that chondritis cannot be demonstrated by x-rays, which explains the results in a recent case. A boy, aged 16 years, was very hoarse and had a discharging fistula in front of the thyroid cartilage. Two months previously, two teeth on the left side had been extracted under local anesthesia. After this, sore throat developed and then apparently a peritonsillar abscess on the left. The abscess was incised, and a swelling appeared in the neck in front of the thyroid cartilage. This also was incised, to be followed by a lung abscess which evidently evacuated spontaneously. At the time I saw the patient the appearance of his larynx was almost that of tuberculosis, both false cords being infiltrated to such an extent that they made an approximation before the true cords, producing the hoarseness. Examinations by smear and guinea-pig inoculation were negative for tuberculosis. Complete roentgen study of the larynx showed nothing; yet

at operation complete necrosis of the thyroid cartilage on the right side was found, necessitating the removal of almost the entire right wing. It would seem that such a condition should be evident roentgenographically, but it was not demonstrable in this case.

DR. EUGENE P. PENDERGRASS, Philadelphia: The fluoroscopic and roentgenographic study of the neck and upper respiratory tract is one of the most valuable supplementary examinations the laryngologists, bronchoscopists and esophagoscopists have at their disposal. The roentgen examination offers a permanent record of the location and extent of the disease or growth, just as the microscopic slide becomes a permanent record of the pathologic process. I do not believe that it is possible for one to say a given case is tuberculosis because of increased calcification of the cartilage, or syphilis because of an associated enchondritis. I do feel, however, that the variation from the normal can be discovered and recorded. The roentgen examination is only a part of the study of the larynx, and it is only after correlation of the laryngoscopic observations, the various laboratory reports, and the roentgen observations that the complete study has been made. The roentgen examination is a most satisfactory method for recording the progress of the treatment of laryngeal and tracheal stenosis. One can see the exact position of any apparatus that is used. Encroachment on the lumen of the larynx and displacement of the trachea from outside pressure are distinctly visible. Such information as this should be of diagnostic importance in assisting one to plan any surgical procedure. The roentgen examination of the neck and upper respiratory tract should be as valuable to the rhinologist and laryngologist as is the sinus examination. Excellent roentgenograms demonstrating soft tissue detail are desirable, but a careful fluoroscopic examination with well accommodated eyes, the observations detailed by Dr. Pancoast being considered, is essential.

DR. GABRIEL TUCKER, Philadelphia: It has been my good fortune to be associated with Dr. Pancoast in this work and I consider the roentgenologic aid that he gives invaluable in the diagnosis and treatment of these cases. In laryngeal disease every obtainable aid is necessary in order to make a correct differential diagnosis, for in disease of the larynx early correct diagnosis may mean saving the patient's larynx and, in many instances, his life as well. Mirror examination alone will seldom give sufficient information for a correct opinion. A routine study should be made that includes a careful history, a complete general examination by a competent internist, serologic studies to exclude syphilis, roentgen examination of the neck and chest, and sputum examinations to exclude tuberculosis, as well as repeated mirror examinations of the larynx. Direct examination with the removal of tissue for biopsy is the final step.

DR. HENRY K. PANCOAST, Philadelphia: Dr. Iglauer has called attention to the word "cooperation," which is the foundation of the work I have just shown. Without cooperation, roentgenology can create little that is new. The institutions in our part of the country are largely judged by the ability of their roentgenologic departments and the ability of the roentgenologist is largely a measure of the spirit of cooperation in the staff of an institution. Cooperation has been the greatest feature of the work with Dr. Jackson, and more recently with Dr. Tucker, and without that cooperation I would have been absolutely unable to show what I have today. I have had to limit my remarks absolutely to the larynx because if I discussed the entire upper respiratory tract it would take a long time to talk about all the conditions that could be diagnosed. There was an excellent excuse for offering the observations from the roentgenologic standpoint. These cases did not all come from the bronchoscopist. There are many conditions, not only in the larynx but in other portions of the upper respiratory tract, that are never suspected by the clinician, and many of these cases came from clinicians. There is no necessity for any controversy as to whether syphilis and tuberculosis can be diagnosed or differentiated by roentgenologic means. These conditions cannot always be diagnosed or differentiated by direct visualization. The frequency with which cancer exists in conjunction with syphilis is well known. It certainly exists in the mouth and I imagine it does in the larynx, and a biopsy is absolutely necessary. Dr. Tucker has called attention to a case in which tuberculosis and carcinoma exists in the same case, and strange to say microscopically the lesions existed side by side. I think, however, that pulmonary tuberculosis was found in this case at the examination, but biopsy was the final test.

INTERNAL DRAINAGE

ITS APPLICATION IN PULMONARY SUPPURATION *

WILLIAM B. FAULKNER, JR., M.D.
SAN FRANCISCO

In the study of pulmonary suppuration, intrabronchial drainage [1] has not had the attention that it deserves. This drainage is of two types: "external" and "internal." By external drainage I mean the ability of a bronchus to empty itself by cough and expectoration. Internal drainage, on the other hand, is the inability of

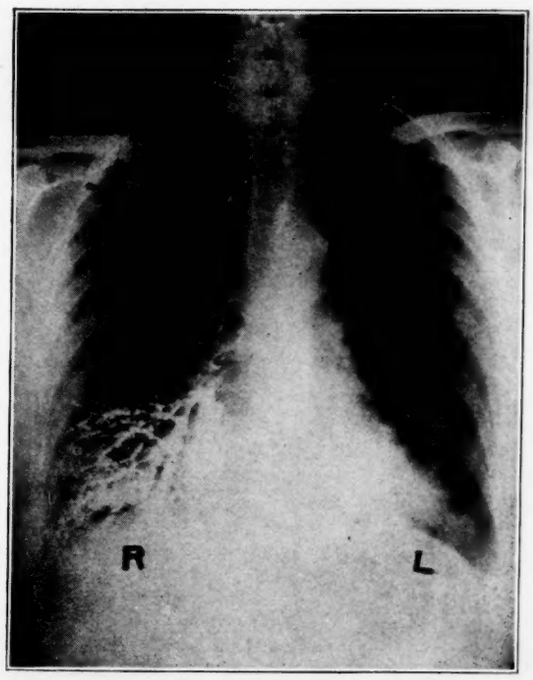


Fig. 1.—Iodized oil injection, illustrating the principle of internal drainage. The oil was introduced through the mouth without any type of anesthesia; consequently the cough reflex was not abolished. The patient was in the erect position during the injection. The oil flowed downward and the bronchi of the right lower lobe were visualized. There is no oil in the remaining portions of either lung. (Iodized oil injection done by Dr. Maurice Lubin.)

a bronchus to empty itself adequately, the pus spilling about from place to place within the lung. This spilling, or internal drainage, is a definite entity in pulmonary suppurations, and an understanding of it is important in the diagnosis and treatment of these conditions.

The occurrence of internal drainage has been substantiated by iodized oil studies and bronchoscopic examinations. The injection of oil has permitted a study of the accessibility of either lung to intrabronchial

* From the Thoracic Surgical Clinic (J. J. and Nettie Mack Foundation), Department of Surgery, University of California Medical School.
* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.
* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

1. Brunn, Harold, and Faulkner, W. B., Jr.: Intrabronchial Drainage, Its Importance in the Diagnosis and Treatment of Pulmonary Suppurations, Surg. Gynec. Obst. **51**: 115-124 (July) 1930.

secretions from the opposite side and has shown that internal drainage can occur even in the unanesthetized patient in whom the cough reflex has not been abolished. The influence of posture on this drainage is demonstrated in figures 1, 2 and 3.

Bronchoscopic examinations under light ether anesthesia on patients with a left-sided pulmonary abscess have shown pus spilling across from the diseased side into the bronchi of the opposite lung (figs. 4 and 5).

Physical examinations, plain roentgenograms, operative studies, and autopsy observations further support the theory of internal drainage. I have recently seen a patient with a right-sided basal pulmonary abscess in whom practically all the abnormal physical observations were elicited on the left side. On bronchoscopic examination the main bronchi of the left lung were filled with pus. The conception that this intrabronchial secretion must have spilled over from the diseased right side into the left lung while the patient was lying on the left side is supported by the fact that almost all the abnormal physical observations disappeared following bronchoscopic treatment and removal of the pus from the left major bronchi.

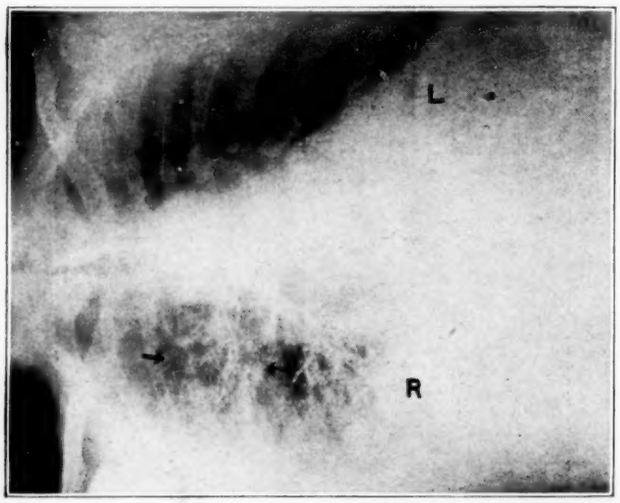


Fig. 2.—Iodized oil injection (internal drainage): Same patient as in figure 1. No further oil was introduced following the taking of figure 1, but the patient had been lying on her right side for fifteen minutes and the iodized oil had spilled from its original position in the lower lobe so as to visualize the right upper lobe bronchi. Note the absence of oil in the left lung. The patient was next turned on her left side. See figure 3.

A second patient, who had been expectorating a pint of pus daily, complained of pain over the right base. Physical examination showed impaired resonance, along with diminished breath sounds and voice sounds, as well as râles over the right lower lobe. The plain roentgenogram showed increased markings at the right base and was interpreted as a possible basal bronchiectasis. The right upper lobe seemed uninvolved on both physical examination and the plain roentgen plates. Iodized oil injection was suggested, and this demonstrated normal bronchi at the base but a very definite enlargement of the bronchi of the upper lobe that had previously appeared normal. Bronchoscopic examination and exploratory thoracotomy confirmed the presence of an upper lobe bronchiectasis. Therefore, the abnormal lower lobe physical observations and x-ray shadows in this case must have resulted from the collections of pus which had spilled by internal drainage from the diseased upper lobe into the lower lobe bronchi (fig. 6).

A young woman who was operated on by means of cautery pneumonectomy for the relief of a right-sided basal pulmonary abscess had an uneventful course for the first few days after operation. She then had a slight hemorrhage from the wound, but this seemed to have been controlled by packing. A few hours later, however, a peculiar air hunger developed and the patient died suddenly. Clinically a pulmonary or cerebral embolus seemed to account for the death. Autopsy disclosed a marble-sized clot of blood in the left main bronchus even though there was no ulceration or abrasion on the left side. Death was, therefore, due to the aspiration, or spilling over, of this clot from the operated right side into the left main bronchus. If I had appreciated the problems of internal drainage at that time, the patient might have been saved by an immediate bronchoscopic treatment and removal of the clot.

In other instances of one-sided pulmonary abscess associated with large amounts of expectoration, similar sudden deaths have occurred shortly after a first-stage pulmonary abscess operation. Postmortem examination in each case showed the bronchi of both lungs completely filled with pus even though the abscess was situated on only one side. This pus must have spilled over from the diseased side into the good lung during and immediately following the operation. Prompt bronchoscopic treatment and removal of the pus would have cleared the passageway and probably would have saved these patients (figs. 7 and 8).

THE MECHANISM OF INTERNAL DRAINAGE

The spilling of intrabronchial secretion is dependent on the following factors: the patency of the bronchial opening; the amount and viscosity of the intrabronchial secretions; the anatomic position of the various bronchial openings; the direction of the bronchial trunks; the site of the primary lung lesion, and the posture of the patient.

If the bronchus is open and the pus is sufficiently thin and in large quantities, the material will spill from the higher to the dependent areas. No spilling will take place if the bronchus is occluded by edema, granulations or thick inspissated pus. Spilling will also be limited in amount when the pus is unusually viscid or in small quantities (fig. 9).

The high position of the right main bronchus, directly opposite the bifurcation, makes this a common site for the collection of secretion when the patient is lying flat on his right side (fig. 10). In this right-sided position, material will spill not only from the right base but also from the left lower lobe into the right upper lobe (fig. 11). The close proximity of the right middle and lower lobe bronchial openings facilitates drainage from one to the other and leaves both liable to spilling from a diseased upper lobe bronchus. This right upper lobe opening is situated about an inch and a half above the middle and lower lobe openings (fig. 12).

Since the middle lobe bronchus runs anteriorly while the lower passes posteriorly, secretions flow from the middle into the lower lobe when the patient is flat on his back, and vice versa when a flat position on the abdomen is assumed (fig. 13). This flow of secretions can be studied by repeated physical examinations. Abnormal physical conditions appear at the areas to which pus spills, and these conditions migrate with changes in posture, as has already been noted in connection with the iodized oil roentgenograms. The areas at which these abnormal signs occur are identical

with the sites to which the iodized oil flows, and the physical signs are the same irrespective of whether the intrabronchial secretion is pus or iodized oil.

In the erect position, secretion in the right or left upper lobe migrates to the bases, but material will flow from the right upper across into the left main bronchus

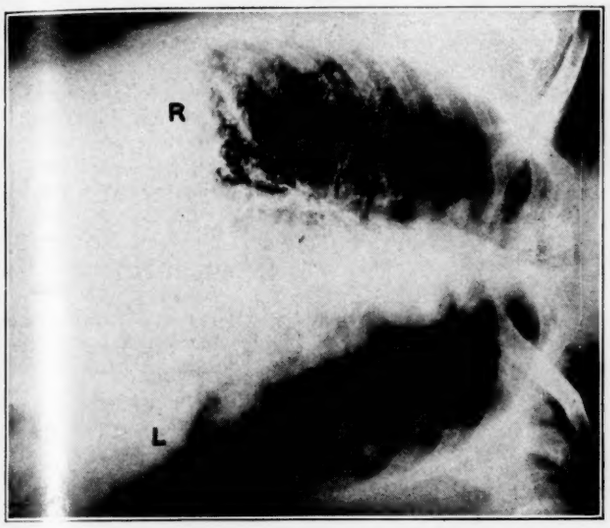


Fig. 3.—Iodized oil injection (internal drainage): Same patient as in figures 1 and 2. No further oil was introduced after figure 1 was taken. The change in the position of the oil resulted from "internal drainage" and was influenced by the posture of the patient. The iodized oil began to spill across into the left lung after the patient lay on her left side. Figures 1, 2 and 3 demonstrate the possibilities for the internal drainage of intrabronchial secretion in the unanesthetized patient in whom the cough reflex has not been abolished. The oil flows to predetermined areas.

when the left side is lowermost (figs. 7 and 8). These observations have been confirmed on numerous occasions. Bronchoscopically, pus has been found in the left lung even when the primary disease was on the right side.

By keeping these factors in mind, the possibilities of spilling will be appreciated and postures can be employed to empty the bronchi, or at least to prevent spilling into the opposite lung.

PRACTICAL APPLICATION OF INTERNAL DRAINAGE

Since abnormal physical observations and roentgen shadows appear in the areas to which the pus spills, a diagnosis is to be made only after repeated examinations in various postures. As has been demonstrated, abnormal physical conditions may appear at regions that are quite distant from the source of the trouble, and possibly no clue will be found on either physical examination or a study of the roentgenograms as to the site of the primary lesion. Even bronchoscopic examination may be misleading, because the constant spilling of pus from one area to another will set up transient secondary inflammatory changes at the regions to which the spilling takes place. These secondary changes must not be mistaken for the main source of the trouble. Because of the difficulty of diagnosis, all the available aids should be employed before making a decision as to the site of the abscess.

In view of the dangers of internal drainage, a careful choice of anesthetic is demanded so that the patient will awaken shortly after operation before the pus has spilled from the bad side and completely drowned the bronchi of the opposite lung. Twilight anesthesia and other prolonged anesthetic agents are contraindicated. Nitrous oxide and oxygen seem most desirable, since the patient awakens shortly after the operation.

If there is a history of large amounts of expectoration, a bronchoscopic examination must be done immediately before the chest operation so as to empty the bronchi and to prevent spilling of pus from one lung to the other. The bronchoscopic treatment should be repeated at the end of the operation if necessary. These bronchoscopic treatments should not be limited to the surgical cases but may be employed to advantage in conjunction with other conservative methods so as to prevent the spilling of pus.

When thoracic surgical procedures are being considered, special attention should be given to the position of the patient, not only on the operating table but also after his return to the ward. This attention to detail will lessen the spilling of pus to obstruct new areas, and it will minimize the possibilities of sudden or latent secondary pulmonary complications. In cauterizing the lung, hemostasis should be as nearly perfect as possible. Otherwise, blood will spill from the operated area into new regions, obstruct the normal air flow, and possibly lead to serious consequences.

I believe that many of the deaths ascribed to postoperative shock, cardiac failure, acute pulmonary edema, pulmonary embolism and cerebral embolism are really the consequences of internal drainage.

SUMMARY

The term "internal drainage" is used to designate the spilling of pus from a diseased bronchus to neighboring bronchi of either lung.

Internal drainage is a definite entity, and an understanding of it is important in both the diagnosis and treatment of pulmonary suppurations as well as in the prevention of postoperative pulmonary complications.

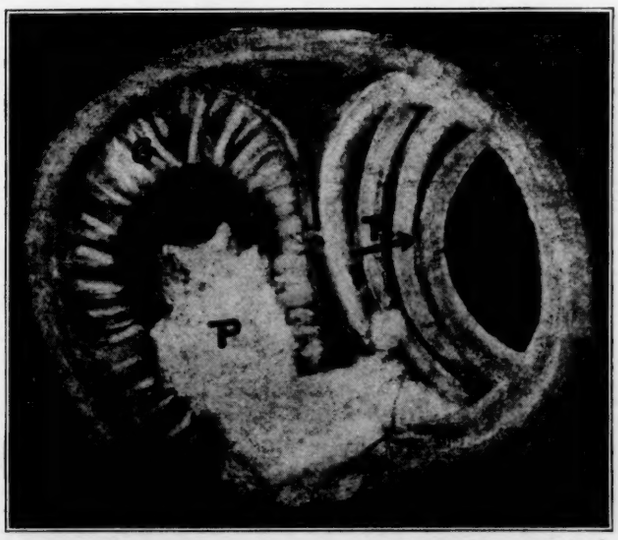


Fig. 4.—Bronchoscopic view at the region of the carina (bifurcation of the trachea) in a patient with a left-sided pulmonary abscess (diagrammatic sketch): The left main bronchus is partially occluded by a rim of edematous granulation tissue (*G*). Note the pus (*P*) spilling from the left main bronchus across the carina (*C*) into the right main bronchus (*R*). This spilling has been referred to as "internal drainage," and was observed in this patient during the bronchoscopic examination under a light ether anesthesia. (Compare with the bronchoscopic view of a normal patient, figure 5.)

Intrabronchial injections of iodized oil have permitted a study of internal drainage and of the factors on which it depends.

Pus within a bronchus may spill to predetermined areas, depending on the posture of the patient, the site of the primary lung lesion and the patency of the

bronchus. This drainage is especially marked when the pus is of low viscosity and of great quantity.

The application of the principles of internal drainage has enabled me to localize more accurately the site of pulmonary abscesses, to lessen the number of patients requiring operation, to lower the operative risk, and to increase the percentage of cures.

University of California Hospital, Third and Parnassus avenues.

ABSTRACT OF DISCUSSION

DR. JOHN ALEXANDER, Ann Arbor, Mich.: Dr. Faulkner has clearly shown the strong influence of posture on migration of secretions within the bronchial tree. Coughing also has a powerful influence. Fluoroscopic observation of iodized oil within the bronchi during acts of coughing demonstrates how freely the oil is moved from one portion of a lung to another

Fig. 10.—Specimen illustrating the anatomy of the tracheobronchial tree and its similarity to a system of open pipes. Free communication between the various bronchial trunks facilitates the spilling of intrabronchial secretions from one trunk to another. *T*, trachea; *C*, carina—bifurcation of the trachea; *L*, left main bronchus; *R*, right main bronchus; *RU*, right upper lobe bronchus; this opening is high up and almost directly across from the carina (*C*); *Sm*, septum between the openings of the middle and right lower lobe bronchi; *S*, septum between the left upper (*LU*) and the left lower (*LL*) lobe bronchial openings; these openings are close together, about 2 inches down from the carina.

or from one lung to the opposite lung, as well as toward the mouth. It may be assumed that the longer infected secretions remain in contact with uninfected portions of lung, the greater will be the chance of infection. In surgical practice these facts may be used to great advantage. Immediately before any operation, every patient who has sputum should evacuate as much as possible of his sputum by voluntary coughing and perhaps by postural drainage. Unless there is a contraindication, patients with sputum who are given a general anesthetic should be operated on in a Trendelenburg position of about 15 degrees and in some patients this position is desirable after operation. Atropine should not be given as a routine preoperative medicament because it makes the bronchial secretions tenacious and therefore more liable to occlude the bronchi and favor pulmonary infection distal to the occlusion. Neither before nor after operation should morphine be given in large enough doses to dull the cough reflex so much that there will be insufficient coughing to raise what secretions are present. Yet enough morphine should be given to allay pain to a degree that the patient is willing to cough. Abdominal or thoracic incisions should be so supported by binders and the nurse's hands that coughing is made easier. Voluntary coughing, inhalations of 5 per cent carbon dioxide in oxygen, postural drainage and bronchoscopic aspiration are useful methods under certain circumstances for evacuation of bronchial secretions after operation.

DR. W. P. LUCAS, San Francisco: The internal drainage of pus, secretions and blood from one lobe to another occurs by the connecting system of bronchi, a sort of pump system which is open at times and closed at others, which makes diagnosis very difficult. The addition of frequent bronchoscopic examinations is therefore important not only for diagnosis but also from the standpoint of treatment. The need of iodized oil in connection with such diagnosis does not need to be emphasized to those who have used it. When the bronchoscope is used it must be used by one who is familiar with its use. I was myself surprised at the ease with which children can be made to take the bronchoscope on repeated occasions without coughing, without any disturbance, without any fear, when it is done by some one who knows how to do it.

DR. LOUIS H. CLERF, Philadelphia: In the Lumleian lectures, Dr. Thomas McCrae pointed out that, in cases of bronchial foreign body, physical signs were commonly elicited over the opposite lung; they were practically always auscultatory signs. In cases of localized pulmonary abscess, the roentgenologist will often report that there is a definite increase in the bronchial shadows over the opposite normal lung; when the abscess is cured, these shadows have lessened in density. By bronchoscopy one usually observes evidences of mucosal infection of the bronchi of the normal lung. Surgeons frequently ask us to carry out a course of bronchoscopic treatments in cases of abscess of the lung or bronchiectasis before external operation is resorted to because they believe that definite improvement results, particularly in the normal lung tissue and bronchi. All of this is evidence to support the belief that secretion from one portion of the lung may be and is distributed to other portions of the tracheobronchial tree. Iodized oil should always be used as a diagnostic measure before external operation is contemplated, particularly in bronchiectasis.

DR. WILLIAM B. FAULKNER, JR., San Francisco: My experience has been similar to Dr. Alexander's, in that this internal drainage not only accounts for the physical manifestations but may lead to serious consequences, such as the development of a suppurative metastatic process in the opposite lung. Throughout this entire work it has struck me that posture has played a much more important part than cough, but I am unable to speak authoritatively on that point as yet, as we are still studying the matter. Dr. Lucas has mentioned the necessity of bronchoscopy in the treatment of these patients, and I may say that in the patients with lung abscesses whom we have seen, even though we have been thoroughly interested in the operative side and desirous of doing thoracic surgical work, we have been able to cure six patients in succession by the employment of bronchoscopy and other conservative measures—a small series, but it warrants attention. In our foreign body cases we have observed the same signs to which Dr. Clerf calls attention; that is, the physical observations will often be on the side of the chest opposite that in which the foreign body is situated.

The Danger of Sterilization.—One of the greatest dangers in the use of sterilization is that overzealous persons who have not thought through the subject will look on it as a cure-all, and apply it to all sorts of ends for which it is not adapted. It is only one of many measures that the state can and must use to protect itself from racial deterioration. Ordinarily it is merely an adjunct to supervision of the defective or diseased. Its object is to protect the public, but it must protect all of the interests of the public, not merely one of them.—Gosney and Popenoe: Sterilization for Human Betterment, New York, Macmillan Company, 1930.

NONMALIGNANT NODULES OF THE BREAST THE RESULT OF PROLAPSE *

LILIAN K. P. FARRAR, M.D.
NEW YORK

The first mastectomy recorded for prolapsed hypertrophied breast was probably that done in 1669 by Durston, who says that "when opened nothing was

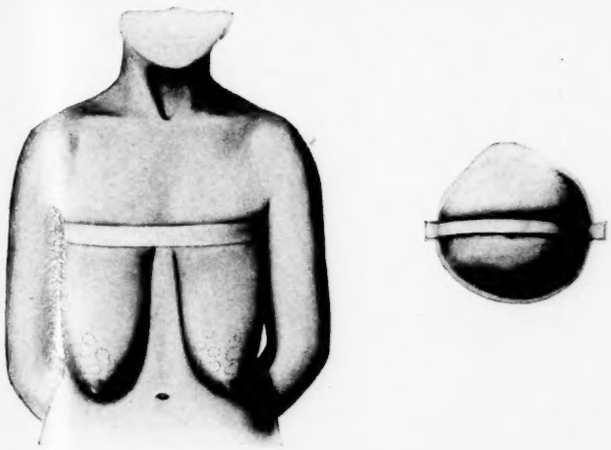


Fig. 1.—Prolapsed atrophic breasts.

found but prodigious bigness (64 lbs.)." In 1857 Velpeau gave a graphic description of the operation he had performed for virginal hypertrophy of the breast. Michel and Poussin were the first, in 1897, to

Fig. 2.—Mode 1750, the "Watteau"; mode 1800, the "Empire."

devise a plastic operation for prolapsed hypertrophied breasts. The first operation in Germany for a similar condition was done in 1908 by Dehne. In 1910 the surgical congress in Geneva held a discussion on hypertrophy of the prolapsed breast, and the operation for its relief.

Little space has been given in the medical literature of this country to virginal hypertrophied breasts, but rather frequent mention is made of this condition and of operation in the surgical journals of Europe, especially in Germany. It was not, however, until 1923 that it began to be recognized that a new condition had arisen, and Kraske seems to have been the first to describe a plastic operation for "virginal atrophic prolapsed breasts." The prolapse was attributed correctly to the loss of fat in the breast tissues, and considered to have been caused by malnutrition. This may well be and no doubt did follow as a result of food conditions during the war. But this cannot be considered to be the cause in our own country, where prolapse of the atrophic breasts is now occurring with alarming frequency.

Fig. 3.—Mode 1875, the "Princess."

Fig. 4.—"The gay nineties."

It is I think the first time, certainly in centuries, that fashion has decreed an absence of breast, in the civilized races. It is true that certain of the savage tribes, notably the Hottentots, use many devices to produce the elongated prolapsed breast which is presumably a mark of beauty in that race. But certainly never in

* This article is shortened in THE JOURNAL by the omission of the bibliography, which will appear in the Transactions of the Section and in the author's reprints.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

this country until now have the breasts been actually forced down by the mode of dress. If one studies old paintings or portraits one will see that, while fashion has its vagaries in dress, the upper part of the dress,

Fig. 5.—Mode 1927, the "tailor made girl"; mode 1929-1930, the "epitome of fashion."

whether it be the "Watteau," the "Empire" (fig. 2), the "straight front" or the "tailor made" (fig. 3), has always given support to the breast tissues. As the bicycle, tennis and golf became popular and women

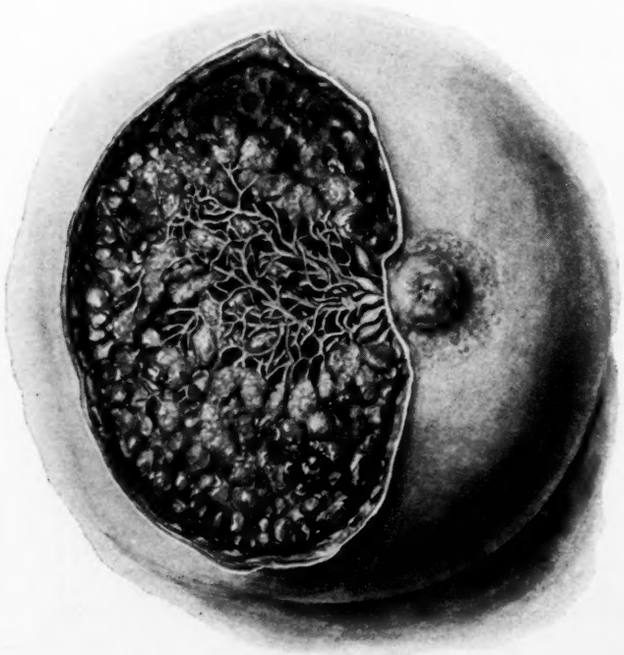


Fig. 6.—Normal breast with fat removed, showing the ampullae of the milk ducts.

took more active part in outdoor sports there came the demand for a dress that would allow more freedom for muscular action (fig. 4), and a much more suitable style of sport dress was evolved. Dame Fashion, unfortunately, soon decreed a dress for sport copied directly from the wardrobe of the young girls' brother. The "boyish form brassière" with its tight nonelastic constriction of the chest was the logical necessity after taking the boys' clothes. The practice of covering the breasts with, adhesive plaster to allow the wearing of a boyish swimming suit, or "Antibe shirt," hastened the changes in form now taking place. The fashion in sport clothes soon extended to evening dress (fig. 5) until the flat chest became *de rigeur* for all the gowns of the young girl. As the breast posteriorly is only loosely attached by areolar tissue to the fascia covering the pectoralis muscle, and attached anteriorly by the fascia to the skin over the breast and at the areola surrounding the nipple (fig. 7), the pressure brought on the soft yielding tissues of the breast soon causes the fat to atrophy and the breast to prolapse. It is not unusual now to see the breasts forced to the waist line, or even to the umbilicus. The upper part of the breast, when prolapse has taken place, is only a fold of flabby skin and the dependent portion consists of glandular tissue that seems to be made up of separate nodules,

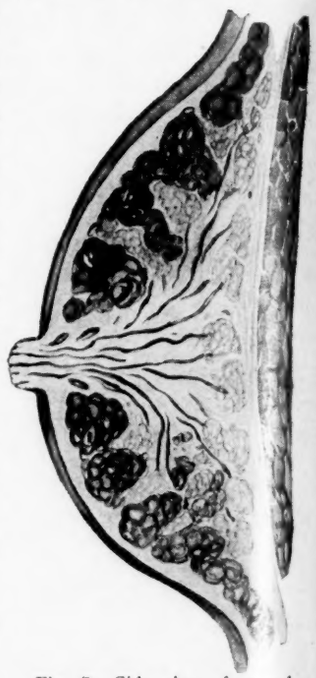


Fig. 7.—Side view of normal breast showing milk ducts and the loose attachment to the underlying fascia.

Fig. 8.—Prolapsed breasts with characteristic nodule in the dependent portion of the breast.

because the fat is entirely absorbed and one feels only the lobules of the breast. These nodules are frequently mistaken for new growths (fig. 8) and the breast removed in part or entirely under the belief that they are malignant. A distinguished surgeon in this country said that he had operated in a hundred cases before he found that they were not cancerous and is now leaving

them alone. But can one leave them alone? Increasing prolapse may soon mean a breast that will have to be fastened at the waist line (fig. 9), as the Hottentots do, or the serious risk of mammary cancer developing from continued breast stasis.

On the other hand, the type of plastic operation now being advocated is a formidable operation necessitating lifting the nipple (fig. 10 *A*) after having made a circular incision around the areolar tissues, and thereby cutting the suspensory ligaments of Cooper and probably cutting the ampulla of the milk ducts which lie directly under the nipple. The removal of the dependent portion of the breasts takes away the glandular secreting tissue (fig. 10 *B*). If the argument is made that sufficient tissue is left for nursing, the fact must be recognized that the ducts have been, at least in part, destroyed (fig. 10 *C*) with consequent inability to nurse from portions of the breast because of loss of ducts; and then arises the danger of "caked" breast and abscess in the nursing mother. Last, but certainly of great importance, is the mutilation of a young girl. The ugly scars, the shock and mortification are not easily to be borne by the young. Fortunately in the young, and the majority of these patients are under 25, the tissues will respond to a properly applied breast support (fig. 11). This should be made of a light elastic webbing and fastened by elastic lacings in the back with two firm straps over the shoulders that may be buckled in front, or in the back if desired, especially when evening dress is worn. The results in approximately fifty cases, which have either been followed personally or reported by physicians who have referred their patients in consultation, have been so satisfactory that I believe I can say it is the only way really to restore the atrophic prolapsed breasts occurring in young girls.

Fig. 9.—Same patient after wearing supporting brassière two months: total disappearance of the nodule seen in figure 8.

CONCLUSIONS

1. Prolapse of the virginal atrophic breast is occurring with alarming frequency in this country owing to the present fashion in dress.
2. There is danger of permanent prolapse of such a breast, and perhaps danger of cancer developing from prolonged stasis of breast tissue.
3. Plastic operation for prolapsed atrophic breasts is an unnecessary mutilation of a young girl.
4. Plastic operations on prolapsed atrophic breasts will deprive nursing mothers of breast tissue and milk ducts with too little tissue left for nursing and possibly "caked" breasts and abscesses of the breasts as a result.
5. The change of dress with proper uplifting support of the breast will cure the condition if treatment is begun early.

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ABSTRACT OF DISCUSSION

DR. GEORGE GRAY WARD, New York: Dr. Farrar has called to our attention at the Woman's Hospital for a number of years past the frequency with which we come across nodules, small in type, that occur in the breasts of comparatively young women and which cause us some doubt as to whether we should operate on them or not; in other words, whether we should make a biopsy or not to prove whether they are malignant. This happens so frequently, and so many times we find that the nodules are not malignant, that we have paid attention to what she has said about the fact that many of these cases are brought about through the method of dress today, pressure on the breasts, and we feel that in those cases in young women this should be given consideration, and the case should be studied before we hastily remove a supposed nodule. The proper support of these breasts, proper instruction, insisting on lack of all constriction, which is quite a common thing among many of these girls who desire to have a boyish figure, has resulted in the disappearance of the lumps in a number of cases. Recently I had my attention called to the

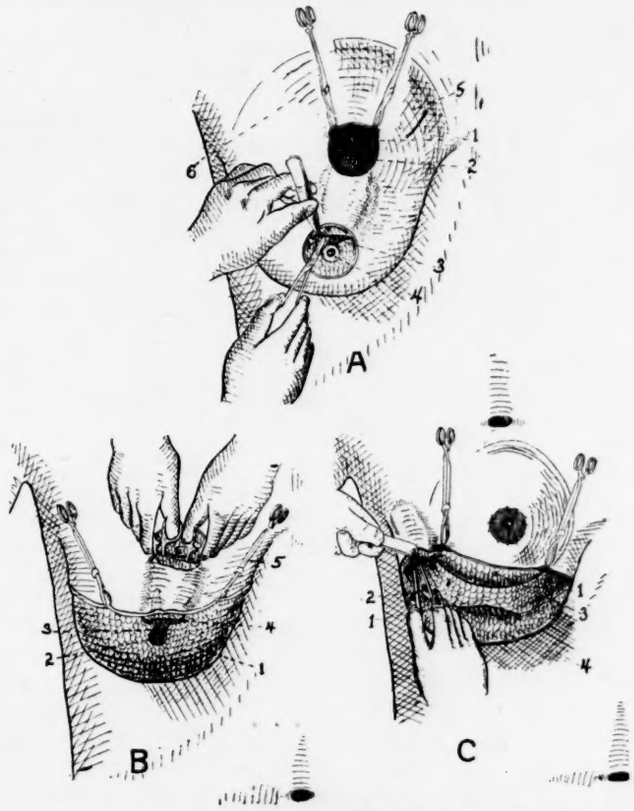

Fig. 10.—The mutilating type of operation that has been frequently recommended for atrophic prolapsed breasts: *A*, the opening for the nipple when excised; *B*, nipple being drawn upward into the artificial opening; *C*, excision of glandular breast tissue with consequent injury to the milk ducts.

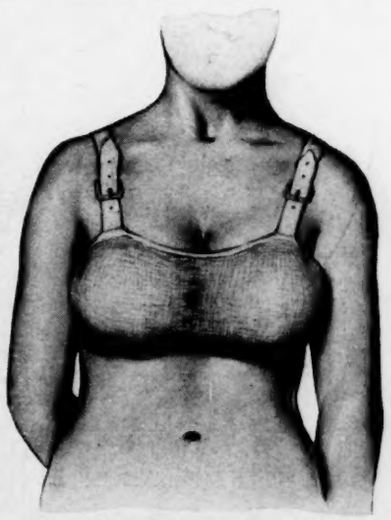

Fig. 11.—Brassière to support and restore the prolapsed atrophic breasts. The shoulder straps are adjustable and the brassière is laced in the back.

operation for lifting breasts that were markedly prolapsed, and also in cases of extensive hypertrophy, by a surgeon in New York who showed a number of photographs before and after, and the technic he used, and at his request I allowed him to give a demonstration at the Woman's Hospital of this operation on a case in a young woman who had pendulous breasts. The operation is certainly a most formidable one. It took between two and three hours to do, and it undoubtedly, as I saw it, means the sacrifice of gland-bearing tissue which may be of value to that woman should she become pregnant later. I believe that the operation is not justifiable in young women and should be used only in these extreme cases of excessive hypertrophy and deformity, and the dangers of operation should be emphasized so that the patient has her choice and knows what she is doing.

ROENTGEN EXAMINATION OF THE PARANASAL SINUSES AND MASTOIDS *

AMÉDÉE GRANGER, M.D.
NEW ORLEANS

During the meeting of this section at San Francisco in 1923 it was my privilege to describe [1] in detail two positions for making roentgenograms of the paranasal sinuses, more especially the sphenoids and ethmoids. I adopted these after painstaking experiments with dried skulls which had the sphenoids and two groups of ethmoids filled with substances of different ray-absorbing values, because in these roentgenograms the shadows of the filled sinuses were superimposed or merged to the least extent and, much more important, the boundary landmarks of these sinuses formed by

Fig. 1.—Normal sinuses in Granger position.

known and constant anatomic structures were readily visible in them.

For the study of the sphenoid and posterior ethmoids as perfect a roentgenogram as is possible is made from this position,[2] the head resting evenly and firmly with the alveolar and glabella points in contact with the author's sinus mask or head rest, its sagittal plane forming a 107 degree angle with the table, and the central ray directed perpendicularly to the latter.

Before and since that meeting I have made roentgenograms of filled skulls in all the other positions that have been recommended and I am convinced that these

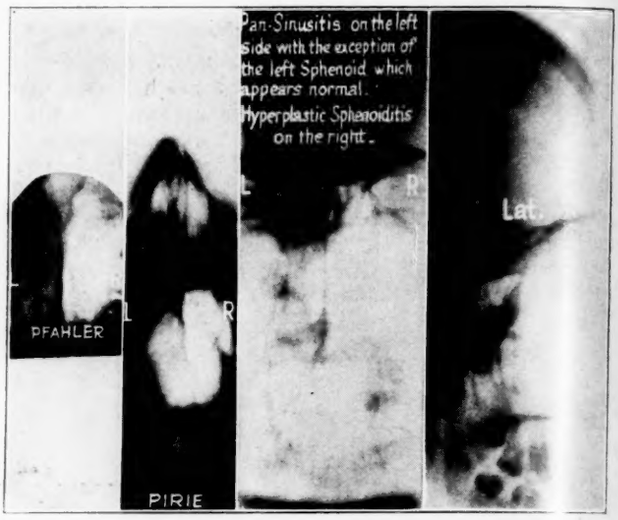
Pan-Sinusitis on the left side with the exception of the left Sphenoid which appears normal.
Hyperplastic Sphenoiditis on the right.
PFAHLER
PIRIE
Lat.

Fig. 2.—Sphenoids and posterior ethmoids in the Pfahler, Pirie, Granger and lateral positions.

do not show the same constant and clear anatomic boundary landmarks for the sphenoid and ethmoids and in all but two the shadows of the filled sinuses were superimposed to a far greater degree.

During the past seven years in my hospital service alone I have made more than 5,000 roentgen examinations of the paranasal sinuses and I am convinced that a careful study of the roentgenograms made in the two positions I advocate will furnish all the information necessary for a diagnosis. I admit readily that the injection of iodized oil in the sinuses will often bring out more clearly and with greater detail pathologic changes present in the sinuses, but I am also certain that in the vast majority of cases these changes could have been seen by more experienced or careful observers in roentgenograms made without the injection of the iodized oils.

In interpreting the sphenoid view (fig. 1) I have learned to place great reliance on the appearance of the upper boundary of that sinus, the curved (Granger) line.

When that line is distinct with clean-cut and sharp upper and lower edges, the sphenoid sinuses do not contain pus or polyps and their lining membrane has not undergone hyperplastic or degenerative changes. This is demonstrated in a most convincing manner by the following case history: A white woman, aged 36, was admitted to the hospital with a temperature of 104 F., a high leukocyte count, cellulitis of the left side of the face, sinus near the inner canthus of the left eye and the left nares completely occluded. Clinical diagnosis of pansinusitis including the sphenoid on the left side was made. Roentgenograms revealed (fig. 2) the left sphenoid and posterior ethmoid regions so opaque in the Pfahler and Pirie films that only one

* From the Departments of Roentgenology of the Charity Hospital and of the Graduate School of Tulane University.
* Read before the Section on Laryngology, Otology and Rhinology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

1. Granger, Amédée: Positive Identification of the Sphenoid and Ethmoid Sinuses, J. A. M. A. **81**: 1336 (Oct. 20) 1923.

2. Granger, Amédée: Roentgen Examination of the Sphenoid Sinuses, Radiology **6**: 23 (Jan.) 1926.

interpretation was possible: that these sinuses were filled with pus. In my film the Granger line is distinct and sharp on the left side, and less dense and distinct with its edges not so clear-cut on the right. On the strength of that finding and in the face of the contradicting clinical and other roentgen observations, I sent in a report that all the sinuses on the left side contained pus excepting the sphenoid, which was clear and appeared healthy, and that there were some hyperplastic changes in the right sphenoid. At operation, pus was found in the left frontal, maxillary and ethmoids, but none was found in the sphenoid after it had been freely opened, as it did not seem possible to the rhinologist that with so many pathologic changes in the other sinuses and so much occlusion of the nares interfering with proper drainage the sphenoid could have escaped infection. He not only found no pus, but the mucosa appeared perfectly healthy. The normal opening of the right sphenoid was then enlarged; it contained no pus, but its mucosa was thickened and slightly discolored.

This last condition, hyperplasia without pus or polyp so frequently diagnosed or suspected by the rhinologist, causes little or no increase in the density of the sphenoid image and it is therefore difficult if not impossible to recognize in roentgenograms made in other than my sphenoid position because those made in other positions have no Granger line to study and their interpretation is based solely on changes in the density of the sinus area; and it has just been shown that the density of the sphenoid image can be increased to a marked degree by pathologic changes entirely outside that sinus.

For the examination of the mastoid regions, roentgenograms are made in the position recommended by Law and in that described by me to the Section on Radiology during the 1926 session of the American Medical Association in Dallas.[3]

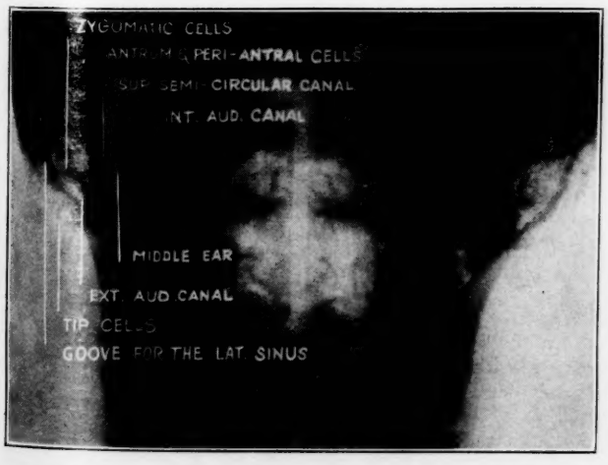

Fig. 3.—Normal mastoids in the Granger position.

The Law roentgenogram has been standard in this country for a number of years and needs no description to the members of this section.

The Granger roentgenogram (fig. 3) gives a more detailed view of the anatomy of the mastoid region and process with fewer structures superimposed. It shows the different groups of cells, including the tip cells, much more distinctly; the superior semicircular and internal auditory canals; the sharp outline of the mastoid cortex; and in this view the course of the external auditory canal is away from and does not overlie the shadow of the mastoid cells.

For these reasons a study of these roentgenograms makes it possible to state whether or not the mastoid cells are clear in cases of furunculosis of the external auditory canal with cellulitis of the external ear and in cases of periostitis of the mastoid process. Both conditions render the mastoid region so cloudy or opaque in the Law roentgenogram as to make such a differential diagnosis impossible.

Fig. 4.—Normal mastoid of an infant, aged 2 years.

Because the superior semicircular canal and surrounding mastoid structure are clearly visible, I was able to make the diagnosis of labyrinthitis in several instances and to have the diagnosis confirmed by the usual otologic tests. And because the outline and course of the internal auditory canal is also clearly visible in these roentgenograms, I was able to make the preoperative diagnosis of tumor of the acoustic nerve in two cases referred to my hospital service from the neurologic service of that institution with the clinical diagnosis of probable brain tumor.

In infants and children under 6 years of age the Law position is the only one that can be satisfactorily employed. For the past three years I have made an intensive study of the roentgenograms of these little patients, and last December in Toronto I presented the result of that study to the Radiological Society of North America.[4] Briefly summarized, this contribution contained the three following important observations:

1. The shadow outline of the sinus plate (anterior wall of the lateral sinus and groove for the lateral sinus) normally seen in the Law roentgenograms of the healthy mastoid of adults is not seen normally in those of the healthy mastoids of infants under 2 years (fig. 4) and rarely under 3 years of age, and when it is seen in the absence of clear and unusual pneumatization it means extensive destruction of the mastoid down to the sinus plate (fig. 5).

2. In a number of cases too large to be attributed to mere hazard or coincidence, infants and babies with definite signs of infection and occlusion but not of

3. Granger, Amédée: New Position for Making Roentgenograms of Mastoids, J. A. M. A. **88**: 372 (Feb. 5) 1927.

4. Granger, Amédée: A Positive Sign of Extensive Destruction of the Mastoid of Infants, Radiology **14**: 495 (May) 1930.

softening and destruction of the mastoid were greatly improved by the irradiation incidental to the making of the roentgenograms and went on to resolution and cure. This observation was confirmed by several competent otologists and was especially noticeable in some patients who, prior to the roentgenographic examination, had run a slow, low grade course over a period of several days without showing any improvement.

3. In a number of cases, much larger than would be expected, the amount of softening and destruction revealed in the roentgenogram and found at operation was out of all proportion to the clinical manifestations. If this is seen, no matter how indistinctly or how blurred, in the roentgenograms of infants less than 2 years of age it means extensive destruction of the mastoid down to the sinus plate. On the other hand, if

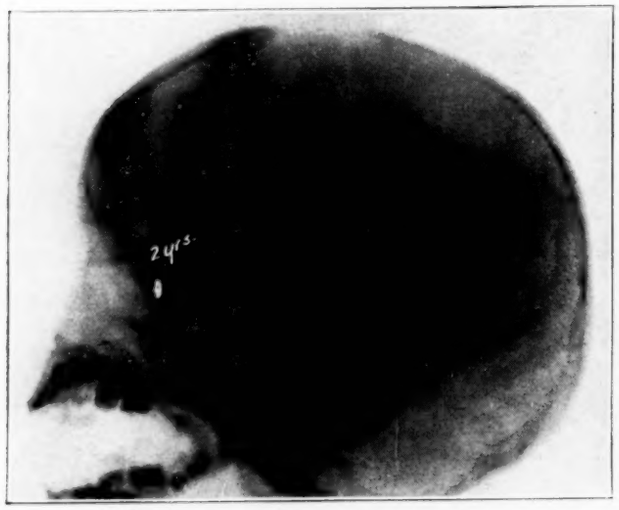

Fig. 5.—Diseased mastoid of an infant, aged 2 years, with the author's sign of extensive destruction present.

it is not seen even in a poor roentgenogram of the mastoid of infants less than 2 years of age it means that extensive destruction of the mastoid does not exist.

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ABSTRACT OF DISCUSSION

DR. LAWRENCE REYNOLDS, Detroit: The sphenoid and ethmoid sinuses give the roentgenologist, as well as the otologist, the greatest difficulty in proper interpretation. Undoubtedly, the method Dr. Granger has described, in addition to other methods, will ultimately lead to a better diagnosis of these obscure cases. It is the borderline cases that give the greatest difficulty, and in those cases the various positions described by Dr. Granger would be of great help. The method I usually employ is that advocated by Pfahler and Pirie. I have not used Dr. Granger's method as much as I might. His method of examining the mastoid is interesting because it enables one to see "around the coroner." The examination is commonly made in the usual or modified Law position, but Dr. Granger's position undoubtedly gives an idea of the tip cells which the Law position does not in a majority of cases. I am extremely interested in his sign of mastoid involvement in infants. At Harper Hospital the mastoids of infants have been examined and a number of cases have been seen. Cheadle was the first to point out the three types of mastoid found in infants. He classified these as: (1) diploetic, or dense form, (2) pneumatic infantile type, and (3) adult type of pneumatic structure. In surgical cases from a given group it was found that 40 per cent fell within the first five-year period, and this being true, it was of tremendous importance to determine as accurately as possible from the films the amount of involvement and the type of structure. The pneumatic infantile type and the adult type of structure predominated in the patients of 5 years of age and under. Lang was among the first to point out the importance of roentgen examination in mastoid diseases, and he divided the roentgen appearance of the mastoid into: normal mastoid; mild, or first degree mastoiditis, in which there is replacement of air content with exudate but no actual change in the cell walls; second degree, in which there is noted, in addition to the presence of exudate, coalescence of cells, with softening and breaking down of the trabeculae; and third degree, in which practically all the cell structure is broken down. Roentgenographically, the first degree is not considered surgical, whereas the second degree, namely, where there is considerable or complete obliteration of normal cell structure, together with breaking down of the trabeculae, is considered a surgical mastoid.

DR. BURT R. SHURLY, Detroit: The checking of observations by operation, and recording them with films, is exceedingly valuable for future reference and gives a record that will establish a definite understanding of the degree of error, which may vary from 5 to 20 per cent according to skill and observation. The point of view of the radiologist has been given, but in the final analysis who takes the responsibility? The otologist! So when otologists want to bury their mistakes they have to take those of the radiologist along with them sometimes. It is my custom to roentgenograph all suspicious sinus cases, but I rely on the clinical evidence, history and examination to determine the probability of disease. Negative roentgen observations do not rule out the possibility of pathologic changes in sinuses. In regard to the interpretation of the sphenoid in figure 1, my answer would be that this was the work of an expert; but a borderline observation becomes more difficult in the hands of those radiologists who are not really interested in head work, or in the hands of the otolaryngologist of lesser opportunity, skill or interest along these lines. I believe that operation on the mastoid or sinuses should not be undertaken without the aid of careful roentgen study, with the exception of emergencies and unusual circumstances. In regard to the second contention, that a large number of cases go on to resolution and cure as the result of irradiation while the film is being taken, I challenge this statement. Many of my patients recovered before the days of the x-rays who were not operated on. Sitting in the sun, eating vitamins, and the pranks of old Dame Nature are just as valuable now as they were long ago. The value of radiology in the interpretation of abnormalities of the sinuses and mastoid is alone worth the effort and expense. I believe it is of the utmost importance that the rhinologist and laryngologist should hitch up with a competent radiologist who is especially interested in this work, and with whom the films can be talked over in each case. The interest and knowledge one attains can be developed in this way.

DR. HARRY L. BAUM, Denver: One point made by Dr. Granger is worth stressing, and that is the importance of standardization of the positions in which roentgenograms are taken, so that the position for every patient may always be exactly the same. Thus a definite technic will be followed consistently in every case studied, whether sinuses or mastoids. I have used Dr. Granger's sphenoid position in many instances, and have studied it with a great deal of interest. When it first came to my attention I thought that my problem was solved so far as sphenoid work was concerned. Further study of the position and of the patients, however, over a period of several years has led me to the final conclusion that although the position has its value—and I say this with the greatest respect for the work Dr. Granger has done—it does not give the final answer in every case of sphenoid diagnosis. There are several reasons for this which I think I am justified in mentioning. It must not be forgotten that the greatest variation in the pneumatization of the sinuses takes place in the ethmoids and the sphenoid. For example, the posterior ethmoid cells may extend back into the anterior or upper part of the sphenoid body so that the observations in the Granger position are entirely invalidated. In fact, I have an anatomic specimen in which both ethmoids have extended across the upper portion of the face of the sphenoid to join in the midline. Also, sphenoid pneumatization on one side may extend into the opposite side so that one cavity occupies

practically the whole of the sphenoid body. Thus, one might be led to conclude that disease was present in both sphenoids when in reality only one was involved. And these are but examples of the numerous variations that can and do take place in the pneumatization of the sphenoid, many of which might invalidate the observations in the Granger position. The diagnosis by means of this position must be governed by one's interpretation of the changes that appear to have taken place in the upper anterior angle of the sphenoid, or the bone which forms that angle, with the addition of the effect which the presence of contained secretion may add by its gravitation downward and forward into the angle when the head is placed in the Granger position.

DR. AMÉDÉE GRANGER, New Orleans: In the short time allotted it was quite impossible to cover the first part of the subject fully. I was suggesting not a technic that is to be used to the exclusion of every other position or technic but one that can be used with good results in a majority of cases and will be found sufficient. There will always be special conditions that will require the use of other positions. Dr. Reynolds is not so far away from my conclusions as would appear from his statement. Under 5 years of age, pneumatization is present. The works of Kirrisson and Politzer make that point clear. Between 2 and 5 the infant mastoid approaches the adult type and one can then see the outline of the sinus plate. Under 2 years of age, the sinus plate is not seen unless there is destruction or unusual pneumatization.

When there is unusual and early pneumatization, or when the sinus plate is superficially situated, there is not much cancellous bone overlying it and its shadow becomes visible. If the sinus plate can be seen and the cancellous bone structure or the cellular structure can be made out, the mastoid that is being dealt with is healthy. But when one side is apparently clear, with no bone or cellular detail visible, there is destruction. I am sorry that I cannot agree with Dr. Shurly about the inefficiency of the therapeutic value of fractional doses of the x-rays in these cases.

I have seen from twenty-five to thirty cases of gastro-enteritis with discharging ears in infants convalescent from bronchopneumonia and otitis media. As a rule, these little patients die. These little patients were roentgenographed and those showing the sign of destruction of the mastoid were operated on. Those who were strong enough to survive the shock of the mastoidectomy got well of the gastro-enteritis. Two in whom there was no actual sign of breaking down or destruction of the mastoid got well of the gastro-enteritis after these fractional doses of the x-rays. After seeing from fifty to sixty patients with mastoiditis without bone destruction get well with fractional doses of the x-rays, one cannot feel that it is an accident.

Measuring Intelligence.—G. Stanley Hall . . . tried, at least once, every new thing that came out. In the case of the intelligence tests, however, anxious to prove to himself that he was not weak-minded, he tried many. First of all, he tried a well known assembling test which has been largely used in the army but was new to him. After fifty minutes, he failed to complete the work, "but all these stunts were done in eight minutes by an assistant in the laboratory workshop." Then he took up one of Thurston's tests for freshmen entering college. The time allotted was twenty minutes, and Hall succeeded in completely mastering it in thirty-eight minutes. On the second Thurston test, however, he fell down. After fifty-four minutes of hard work, there remained several questions which he could not answer. "Here," Hall says, "my time was about twice too long so that my marks should be about 50 on the scale of 100—and from this should be discounted failure to answer 5 per cent of the questions." As a result of this bad showing, Hall felt that he had been too ambitious, so he took up Meyers' tests for young children in the grades. He was told to draw "a line from the first circle to the last circle that shall pass below the second and fourth circles and above the third and fifth circle" and much more of the same thing. Here he scored another failure. He was required as he said, to hold in memory, after one hearing, about fifty words and this he couldn't do.—Swift, E. J.: The Psychology of Childhood, New York, D. Appleton & Co., 1930.

INDICATIONS FOR AND RESULTS OF CONSERVATIVE OPERATIONS ON THE KIDNEYS*

WALTMAN WALTERS, M.D.
ROCHESTER, MINN.

In a consideration of conservative operations on the kidney, I have grouped the cases into (1) those in which there is obstruction usually due to stone in the ureter, pelvis of the kidney, or the calices; (2) those in which obstruction similarly situated, not the result of calculi, produces hydronephrosis, and (3) those in which a diseased portion of a duplicated kidney exists. On a previous occasion, I presented the results following conservative operations in the latter two groups; namely, successful resection of the renal pelvis and removal of the infected hydronephrotic portion of a duplicated kidney. I shall therefore refer to these groups briefly. After the passage of another year I still believe firmly that, if sufficient renal parenchyma remains, such kidneys can be preserved.

HYDRONEPHROSIS

In June, 1930, I reexamined a patient whose right renal pelvis had been resected eighteen months previously for hydronephrosis and whose left renal pelvis had been resected for hydronephrosis fifteen months previously. Prior to the first operation, pain, chills and fever had been present over a period of months; the capacity of each renal pelvis varied from 200 to 350 cc. and the pelves contained infected urine. The patient is now in good health, has gained 20 pounds (9 Kg.) and has not had evidence of urinary obstruction. Cystoscopic examination and estimations of the function of each kidney show the kidneys to be functioning satisfactorily; neither kidney contained residual urine. The right kidney excreted a maximal amount of indigo carmine and the urine from it did not contain pus. The function of the left kidney which, prior to operation, was the poorer of the two kidneys, although still below normal had improved since operation. I have under my care three other patients with similar types of obstruction on whom a similar type of operation has been done on one kidney successfully; the other kidney will probably be operated on in two or three months, or as soon as the condition of the patients permits. In my review of the literature I have not found a report of another case of successful bilateral resection of the renal pelvis for hydronephrosis.

The beneficial effects of simple ligation and division of anomalous obstructing renal vessels, producing moderate hydronephrosis only, should be remembered. A case in point is that of a young woman with bilateral polycystic kidneys, the right kidney being obstructed by anomalous renal vessels. In May, 1929, these vessels were divided and ligated. Subsequently, there has been relief of symptoms of urinary obstruction. In another case of renal colic in which there was uniform but not marked dilatation of the left renal pelvis and calices, ligation and division of two anomalous arteries and one vein relieved the patient of symptoms of obstruction in the urinary tract.

In connection with the foregoing cases, attention should be called to the fact that heminephrectomy or resection of a portion of the kidney will probably be

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* From the Division of Surgery, the Mayo Clinic.
* Read before the Section on Surgery, General and Abdominal, at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

most successful if arteriosclerosis is not present. The possibility of bleeding from an open-mouthed sclerotic branch of a renal artery, after resection of the kidney, may necessitate nephrectomy, and therefore the existence of arteriosclerosis must be carefully weighed in making a decision as to whether conservative operation of this type should be attempted.

URINARY CALCULI IN PRESENCE OF UNIMPAIRED RENAL FUNCTION

It is well to emphasize that renal or ureteral calculi will often produce enough obstruction to the passage of urine or reflex disturbances of unknown type to interfere with the excretion of any medium used in determining the differential function of the individual kidney, and thus lead to uncertainty as to the functional capacity of the kidney carrying the stones. With a history of renal obstruction, the finding of a shadow or shadows in the renal pelvis, calices or ureter, cystoscopic examination may show abnormal function of the kidney so obstructed and lead to the erroneous assumption that the kidney is destroyed, particularly if the symptoms have been present for a long time, when as a matter of fact the obstructive stone may have produced obstruction only recently. In such cases, especially if a ureteral calculus is present, it is advisable to remove the stone from the ureter and await the development of other indications leading to sufficient clinical evidence to remove the kidney.

A woman, aged 50, came to the Mayo Clinic, Aug. 7, 1929, with the history that in January, 1929, she had had three attacks of left renal colic in a period of ninety-six hours. It was said that a stone had been found in the ureter and had been pushed back into the pelvis of the kidney. Blood and pus were noted in the urine. Since then the patient had not had colic. The urine contained pus graded 1; a test of renal function showed blood urea 20 mg. for each 100 cc. A roentgenogram of the kidneys, ureters and bladder showed the shadow of a stone in the lower part of the left ureter 1.5 by 1 cm. After the injection of phenolsulphonphthalein there was excretion of 20 per cent from the right side and none from the left side in fifteen minutes. Excretion of indigo carmine was graded 2+ on the right and 1+ on the left. A pyelogram showed the pelvis and calices of the left kidney to be dilated, graded 3 to 4, and apparently incompletely filled. August 15, left ureterolithotomy was done. The ureter was large and there was considerable inflammation around it. It seemed advisable to remove the ureteral calculus, reserving decision until later as to whether nephrectomy was to be done. The patient's convalescence was uneventful. September 5, a cystoscopic examination and a differential functional test of the kidneys showed excretion of indigo carmine from the right kidney to be graded 4 and from the left kidney to be graded 3; there was slight infection in the left kidney. September 6, the patient was dismissed from the hospital; the wound was healed and the general condition excellent. Subsequent letters from the patient reported her condition to be excellent with no further pain; she has gained 10 pounds (4.5 Kg.). The urine was normal except for a few pus cells.

Interesting in this respect is a small group of cases of dilatation of the upper portion of the urinary tract, possibly neurogenic in origin, or the result of contracture of the vesical orifices of the ureters. In some of these cases calculi develop as the result of this obstruction. The removal of the calculi and the relief of the obstruction by plastic operation on the ureteral orifice may result in relief of the obstruction to the extent that the symptoms subside and the function of the kidney improves. In August, 1929, I removed three calculi from the right ureter of a patient who had had intermittent right renal colic for five years. There was also a history of hematuria with considerable pyuria and dysuria. The pyelogram showed dilatation of the renal pelves, calices and ureters. Dilatation was much more marked on the right side than on the left; the ureter was angulated and calculi were lodged at the points of angulation. After removal of the calculi, cystoscopic examination showed that excretion of indigo carmine from the right kidney was graded 2, and from the left kidney was graded 3. In March, 1930, six months after the operation, the patient reported excellent progress since the operation; she had not had colic or fever and had gained 35 pounds (16 Kg.).

MULTIPLE RENAL CALCULI AND LARGE BRANCHED STONES

A group of cases was studied in which multiple stones, including a large branched stone (sometimes called the stag-horn stone) completely filling the pelvis and calices, were successfully removed. In these cases nephrectomy is considered by some to be the operation indicated. The decision whether to remove the kidney or to preserve it should be dependent on the condition of the kidney and not on the technical difficulties of the conservative operation of pelviolithotomy or nephrolithotomy nor on the opinion held by some that such kidneys, if relieved of stones, will quickly form others. Experience in the Mayo Clinic, however, has been that stones reform in the kidney only rarely provided there is satisfactory renal function and adequate drainage. Unless an accurate method is used of ascertaining the completeness of the removal of renal calculi, such as immediate fluoroscopic examination, or a roentgenogram at the time of operation, there is a possibility of a stone or stones being overlooked in the kidney.

In February, 1930, I removed twelve calculi from the left renal pelvis and calices of a woman, aged 33, who had had intermittent left renal colic with chills and fever for a year. The largest stone was pyramidal and 2 cm. in diameter; the others varied from 2 mm. to 1 cm. in diameter. Because of the normal appearance of the solid portion of this kidney and of its large size, I preserved it. The patient returned to the clinic for reexamination two months later. She had gained 15 pounds (6.8 Kg.) and was not having renal colic or fever. The estimation of renal function prior to operation in this case showed that the left kidney was not excreting indigo carmine, but three months after the removal of these stones its function was normal, as evidenced by the fact that excretion of indigo carmine was graded 4. On both examinations, the function of the right kidney was normal.

It is my practice to advise operation in cases in which a large branch stone fills the renal pelvis and the ureter, if there is renal colic, hematuria or renal infection. Experience has shown that in many of these cases the entire stone may be removed completely; it is usually necessary to break the stone in two portions and again to check the accuracy of complete removal by means of the fluoroscope at the time of the operation. In a presentation of cases of this type on a former occasion, attention was directed to the fact that probably one of the important steps to insure success of the operation is conversion of the pelvis and calices temporarily from a closed into an open cavity by insertion of a catheter through the cortex following removal of the stone.

CALCULI IN THE PRESENCE OF SERIOUSLY IMPAIRED RENAL FUNCTION

The problem of treatment is difficult in the presence of marked disturbance of renal function, destruction of renal tissue, and calculi, especially bilateral calculi. Conservative operation in this group of cases is essential. Striking improvement has been noted in renal function and in the patient's general condition as the result of the removal of such calculi.

Attention is called to the case of a woman, aged 31, who had had intermittent renal colic, fever and pyuria for eight months. Right nephrolithotomy had been performed elsewhere and she presented herself at the clinic in December, 1928, complaining of continuation of her former symptoms. Shadows in both renal areas were noticed and partial renal insufficiency was evidenced by an accumulation of 65 mg. of urea in each 100 cc. of blood. Cystoscopic examination showed pus graded 2 in the urine from both kidneys; excretion of indigo carmine from the right kidney was graded 2 and from the left kidney graded 1. Left pelviolithotomy was done with removal of a large triangular stone, and one month later right pelviolithotomy was done with removal of a stone approximately a fourth the size of the other. The postoperative course was uneventful and the patient was dismissed in February, 1929, in good condition. She returned to the clinic in June, 1930; she reported a gain of 24 pounds (10.9 Kg.) and stated that her condition had been excellent without evidences of renal disturbance. Cystoscopic examination, June 7, showed excretion of phenolsulphonphthalein to be, in fifteen minutes, 5 per cent from the right kidney and 5 per cent from the left kidney. The blood urea was normal and roentgenograms of the kidneys, ureters and bladder did not show shadows of stones.

Another case of somewhat similar type was that of a man, aged 36, with bilateral pyelonephritis, impaired renal function, and calculi in the left kidney. He had had intermittent hematuria, left renal colic, and fever for one and a half years. The right kidney contained pus, graded 2, with excretion of indigo carmine, graded 2. The left kidney contained a large stone filling the pelvis and calices; excretion of indigo carmine from the left kidney was graded 1. The operation, in April, 1930, showed the kidney to be lobulated and two-thirds normal size. Under ordinary circumstances, the decrease in the size of the kidney and its abnormal appearance would have led to nephrectomy, but in view of the infection persisting and the reduction in the function of the right kidney, pelviolithotomy was done. The postoperative course was uneventful and the patient was dismissed from observation fourteen days after operation with the wound healed and the general condition excellent. Cystoscopic examination a week later showed function of the left kidney to be a little more than half of normal, and the urine to be free from pus; the function of the right kidney was reported to be slightly reduced; the urine was free from pus.

SUMMARY

A sufficient number of successful cases of conservative renal pelvic resection for hydronephrosis and heminephrectomy have been reported to emphasize the value of conservative operation in such cases rather than nephrectomy, provided a sufficient amount of normal renal parenchyma remains.

Beneficial results follow simple ligation and division of anomalous renal vessels which obstruct the ureteropelvic juncture and produce hydronephrosis.

Renal or ureteral calculi will often produce enough disturbance of renal function to lead to an erroneous assumption that the kidney may be partially or even totally destroyed, but that such is not the case is evidenced by satisfactory function of the kidney after the removal of as many as eleven stones, or of a staghorn stone filling the pelvis and calices.

Seriously injured kidneys, containing calculi, may show remarkable restoration of function following the conservative operation of pelviolithotomy.

ABSTRACT OF DISCUSSION

DR. HENRY G. BUGBEE, New York: Even with the possession of all possible data in a given case, it may be necessary for the surgeon to make his decision at operation as to whether a conservative operation or a nephrectomy should be done; the best of surgical judgment is here brought into play, and more than ordinary surgical skill is necessary for obtaining successful results, if a plastic operation is advisable. While the frequency of bilateral kidney disorder, and of its subsequent appearance in its fellow after the removal of one kidney, must always be borne in mind; at the same time, the possibility of leaving a dead kidney, or one that will drain poorly, must also be considered. The work of Hinman on renal counterbalance has shown how one kidney may become functionless as the opposite organ undergoes compensatory hypertrophy; on the other hand, all have seen a seriously damaged kidney resume fair function after the disease condition has been removed. Last year, Dr. Walters presented a series of carefully selected cases in which he had carried out plastic operations on the kidney pelvis and ureters, and also a heminephrectomy. He showed preoperative and postoperative pyelograms and gave functional kidney tests. His operative results were excellent; only in one instance was a secondary nephrectomy necessary. Such excellent results have rightly encouraged Dr. Walters to report further conservative operations on the kidney. His results in cases of obstruction from stone in the ureter or kidney pelvis or calices, from similarly located obstructions, not the result of calculi, in resection of a diseased portion of a duplicated kidney and a large solitary cyst, are equally brilliant.

The cases that Dr. Walters has reported demonstrate the great importance of preoperative study, judgment and skill at operation, and the importance of postoperative study, if conservation operations on the kidney are to result successfully.

DR. W. F. HARPER, Selma, Ala.: I have had experience with one case which emphasizes the facts brought out in the paper. A youth, aged 19, had a fracture of the cervical spine, which resulted in a double infection of the kidneys. The left kidney finally became completely blocked, requiring a nephrectomy. At this time the left kidney was full of stones and multiple abscesses, and the pelvis was full of thick, creamy pus. Three weeks after the left nephrectomy, the right kidney, having had good function at the time of operation, became completely blocked. Repeated attempts with the cystoscope were made, but I was unable to unblock the right kidney. The temperature rose to 109 F. in the axilla. The right kidney was explored. It was a mass of abscesses and the pelvis was chock-full of thick, creamy pus and many stones. When the pelvis was opened, the pus must have jumped out for at least two feet. The patient remained unconscious for three days, with a temperature around 106 F. This was six years ago. Since then the same kidney has been operated on four times, stones being removed each time. The last time, six months ago, two stones were removed from the kidney, and no new stones have formed since then. The boy has gained 40 pounds (18 Kg.) and is carrying on a large business successfully.

DR. GEORGE W. REESE, Shamokin, Pa.: What symptom or symptoms guide the surgeon in what has been demonstrated here as dormant stones?

DR. WALTMAN WALTERS, Rochester, Minn.: The earliest plastic operations for hydronephrosis were done by Küster and Finger. Later, Quinby reawakened interest in the subject by his report of several interesting cases in which the ureter had

been reimplanted into the renal pelvis. Some of these cases he had traced for as long as eight years subsequent to operation. Three years ago, Braasch and I began a series of studies in a group of cases in which I had successfully resected the hydronephrotic renal pelvis, and reports of these cases with preoperative and postoperative studies of renal function and pyelographic studies were presented last year. Braasch, in 1912, reported three cases in which heminephrectomy was successfully performed by W. J. Mayo. Hugh Young and Edwin Davis, in 1917, called attention to the fact that these three cases were probably the first successful ones in the United States. At that time they were able to find in the literature only twenty-six cases in which heminephrectomy had been done for duplication of the renal pelvis. They stated that, in sixteen of these cases, half of the kidney was normal and the conservative operation of heminephrectomy could have been done rather than nephrectomy, which had been done. McKim and Smith, in 1924, reviewed from the literature a series of 120 cases of solitary cyst of the kidney, including three of their own. In thirty-four of the series resection of the cyst was performed, with recovery in thirty-one cases. I want to emphasize again, in the treatment of multiple calculi in the kidney, that the decision as to whether the kidney should be removed or whether the conservative operation of pelviolithotomy should be done should rest not so much on the technical difficulties as on the appearance of the kidney, its size, the relative amount of renal parenchyma present, and the degree of hydronephrosis and the degree of dilatation of the calices, if any. In other words, the decision should rest on the ability of the kidney to function and drain properly.

THE INCIDENCE OF RECURRENT RESPIRATORY INFECTIONS IN CHILDHOOD *

C. C. McLEAN, M.D.
BIRMINGHAM, ALA.

Respiratory infections comprise one of the great problems of the day from both an economic and a social standpoint. Sydenstricker[1] of the United States Public Health Service found that more than half of the total deaths were due to respiratory diseases, notwithstanding the fact that the ratio of respiratory illnesses to deaths from respiratory causes was 300 to 1. These figures are almost identical with the statistics of the United States Army.[2]

Respiratory infections are responsible for more than half the time lost by the wage earner due to illness. The percentage of children who lose time from school as the result of respiratory infections is probably higher than that of the wage earner. I feel that anything, no matter how small, that might help directly or indirectly to a better understanding of the clinical manifestations of the disease, in the hope that in the future it might throw some light on the solution of this great problem,[3] is well worth time and consideration.

Experimental studies and investigations in respiratory infections are being made largely along a bacteriologic line.[4] Clinical observations have been confined principally to groups of individuals, this information being obtained largely by questionnaires. Townsend,[5] Smiley[6] and Barrow[7] have reviewed the literature and have done much work. From investigations among college students, it was found that repeated colds each season were as prevalent in one section of the country as another.

Smiley[6] of Cornell University states that "smoking, exercise, cold baths, hours of sleep, draft over beds, kind of underwear, kind of footwear worn in wet weather, perspiration after exertion, constipation, exposure to dust or gas, mouth breathing, nose and throat operations and family history in regard to 'colds' had little or no apparent effect on the susceptibility of the individual to repeated attacks of respiratory infections."

Barrow[7] of Stanford University states that: "1. The incidence of colds is not markedly influenced by the various systems of heating used in the studies and living rooms of the students. 2. Whether the students use sleeping porches, well ventilated bedrooms or poorly ventilated bedrooms for sleeping purposes does not materially affect the individual's susceptibility to respiratory infections."

Apparently little or no effort is being made toward a better understanding of the clinical manifestations of the diseases by the study of the conditions in individual patients in early childhood.

Every physician, probably, has been impressed with the large number of children who have two or more distinct respiratory infections during the fall and winter months.

In 582 patients with respiratory infections seen in private practice from Sept. 1, 1928, to June 1, 1929, accurate records were made, with especial reference to recurrent infections. For comparison, 381 children with respiratory infections were observed from Sept. 1, 1929, to May 1, 1930.

RECURRENT INFECTIONS

Children are not considered as having a recurrent infection except those who were free from symptoms for at least three weeks and had previously that season been seen and treated with the primary condition.

The time elapsing between the primary and recurrent infections is calculated from the date of the last visit of the old illness to the date of the first visit of the new illness.

Many of the children in the series had other infections and were treated in the homes by their mothers or by other physicians, but owing to the inaccuracy of histories obtained from the parents, no infections are included in the series except those in children who were seen professionally.

The percentage of recurrent respiratory infections, according to ages, of the 582 children to be reported, as compared with 381 cases observed from Sept. 1, 1929, to May 1, 1930, and 361 cases reported in 1928,[8] shows that recurrent infections are common in patients of all ages, the age of the child apparently having little influence on the number of recurrent infections. Recurrent infections are as prevalent in one year as in another and occur in about the same percentage each year. Of the 582 patients with respiratory infections observed from Sept. 1, 1928, to June 1, 1929, 241, or 41.7 per cent, had one or more recurrent respiratory infections.

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* Read before the joint meeting of the Section on Diseases of Children and the Section on Preventive and Industrial Medicine and Public Health at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.

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Of 381 patients with respiratory infections observed from Sept. 1, 1929, to May 1, 1930, 142, or 37.2 per cent, had one or more recurrent respiratory infections.

WEATHER CONDITIONS

An attempt was made to see what effect weather conditions had on the number of primary and recurrent respiratory infections. Each month from September to June was divided into four weeks. The actual temperature, sunshine and rainfall each week was compared with the normal or average for the same period, and the number of primary and recurrent respiratory infections seen that week were considered in relation to the weather conditions. Apparently, weather conditions had no effect on the number of either the primary or the recurrent respiratory infections.

During the month of December, in which the peak in the epidemic was reached, 30 per cent of the total number of respiratory infections were seen and the weather conditions were apparently ideal. The temperature averaged 0.4 degree above normal. There was 13 per cent more sunshine than the average. During the month there were only five days in which it rained, and this includes the days in which there was as much as 0.01 inch of rainfall.

TONSILLECTOMY AND ADENOIDECTOMY

Recurrent respiratory infections were prevalent in both the patients who had had the tonsils and adenoids removed and in those who had not had the operation. Of the children under 3 years of age with recurrent respiratory infections, only 6 per cent had had the tonsils and adenoids removed. Of the children over 3 years of age with recurrent respiratory infections, 49 per cent had had the operation. The variation in the percentage of the recurrent incidence, according to ages, in children who had had tonsillectomy and adenoidectomy can be explained by the fact that many of the children over 3 years of age have had the operation, while very few of the younger children have had the tonsils and adenoids removed.

Table 3 is the most interesting table of the series, showing a marked variation in the monthly percentage increase in the total number of primary cases, while the monthly percentage of the recurrent infections in primary cases shows little variation.

TABLE 1.—*Number of Patients with One or More Recurrent Respiratory Infections*

Number Patients with Respiratory Infections	Number Patients with 1 Recurrent Respiratory Infection	Number Patients with 2 Recurrent Respiratory Infections	Number Patients with 3 Recurrent Respiratory Infections	Number Patients with 4 Recurrent Respiratory Infections	Number Patients with 5 Recurrent Respiratory Infections	Number Patients with 6 Recurrent Respiratory Infections
Sept. 1, 1928–June 1, 1929						
582	158	57	18	6	1	1
Sept. 1, 1929–May 1, 1930						
381	89	39	11	3	0	0

TABLE 2.—*Percentage of Recurrent Respiratory Infections According to Age*

Age in Years	Sept. 1, 1928–June 1, 1929 Number Patients	Per Cent with Recurrent Respiratory Infection
0 to 1	90	48.8
1 to 2	115	51.3
2 to 3	83	35.2
Over 3	294	35.6
Total	582	41.7

During the months of December, January and February, 353, 60 per cent of the total number of primary cases, were seen. The monthly percentage of increase varied from 7.1 per cent to 55.7 per cent. During this period, the variation in the monthly percentage of recurrent infections in the primary cases was 1.2 per cent, though more than half the total number of recurrent infections were seen.

TABLE 3.—*Monthly Percentage Increase in Total Number of Primary Respiratory Infections, as Compared with Monthly Percentage of All Recurrences in Primary Cases*

Months	Sept. 1, 1928–June 1, 1929 Number Primary Infections per Month	Number Recurrent Infections per Month	Monthly Percentage Increase of Total Number of Primary Cases (Including Current Month)	Monthly Percentage of Recurrences of All Primary Cases
Sept.	31	1	....	....
Oct.	56	7	64.3	8.0
Nov.	94	18	52.0	9.9
Dec.*	228	58	55.7†	14.1‡
Jan.	87	64	17.5	12.9
Feb.	38	73	7.1	13.6
Mar.	24	57	4.3	10.2
Apr.	13	46	2.2	8.0
May	11	27	1.8	4.6
Total....	582	351		

* In comparing the monthly percentage increase of the total number of primary cases with the monthly percentage of recurrent infections of the total primary cases, the current month must be included, as a certain number of the recurrent infections are recurrences of the primary cases of the current month.

† The monthly percentage increase of the total primary cases for the month of December, 55.7, is obtained by dividing 228 by 409 (the sum of 31, 56, 94 and 228).

‡ The monthly percentage of recurrences of total primary cases for the month of December, 14.1, is obtained by dividing 58 by 409.

During the months of September, October, November and December there is a marked increase each month in the number of both the primary and the recurrent respiratory infections. During the month of December the peak of the epidemic is reached. From December to June each month shows a sharp reduction in the number of primary cases, but this is not true with the recurrent infections.

In the month of December, 228, or 39.1 per cent, of the total number of primary cases were seen. There were 58 recurrent infections.

In January, 87 primary and 64 recurrent infections were seen. There were 141, or 62 per cent fewer primary cases than in December. There was an increase of 6, or 10 per cent in the number of recurrent infections, notwithstanding the 62 per cent reduction in the number of primary cases.

In February, 38 primary infections and 73 recurrent infections were seen. There were 49, or 56 per cent, fewer primary cases than in the preceding month. There was an increase of 9, or 14 per cent, in the number of recurrent infections.

From these observations, it seems that contact with other individuals who have the disease has little or no influence on the number of recurrent respiratory infections and a marked influence on the number of primary respiratory infections.

The chart shows the weekly incidence of all the recurrent respiratory infections in the primary cases. The peaks in the weekly incidence of the total recurrent infections are the fourth, seventh, thirteenth, fifteenth, eighteenth and twenty-first weeks.[9]

9. When it is stated that a recurrent infection occurred in four weeks, it means that the child's illness with the second infection began some time between the third and the fourth week from the date of the last visit of the old illness to the date of the first visit of the new illness. If the recurrence is five weeks, the illness began some time between the fourth and the fifth week from the date of the last visit of the old illness to the date of the first visit of the new illness and thus according to the week stated.

The recurrent infections in the younger children reach their peak a week earlier at the seventh and thirteenth weeks. At the fifteenth week the older children do not show a peak. At the fourth, eighteenth and twenty-first weeks, the peaks are the same in children of all ages.

The variation in the peaks of the seventh and thirteenth weeks might be due to one of two things: the younger children are sicker and the physician is called earlier, or the parents' interests are more centered in the younger children.

When the inaccuracy of the methods of estimating the time between the end of the old illness and the beginning of the new is considered, the consistency in the peaks of the recurrent infections is the more remarkable and suggests that a respiratory infection is a periodic recurrent disease.

OTHER OBSERVATIONS

The upper respiratory types of infection predominated, the larger number of cases being of a nasopharyngeal and tonsillar type.

One hundred and three patients had definite ear involvements. Sixteen ear drums discharged spontaneously a blood-stained serofibrinous exudate, smears showing few pus cells and many organisms. In the majority of cases, the ears were dry at the end of forty-eight hours. Eighteen patients had one or both ears punctured. No ear discharged pus longer than three weeks. The majority were dry at the end of a week and in none of the cases were there signs or symptoms of a mastoid involvement.

Clinically, the nonirrigated ears did better; the discharge was of a shorter duration and less profuse than in the cases in which irrigation was used.

In forty-three cases spasmodic croup was one of the most pronounced symptoms.

TABLE 4.—*Percentages from Sept. 1, 1929, to May 1, 1930* *

	Sept. 1, 1929–May 1, 1930			
Months	Number Primary Infections per Month	Number Recurrent Infections per Month	Monthly Percentage Increase of Total Number of Primary Cases (Including Current Month)	Monthly Percentage of Recurrences of All Primary Cases
Sept.	23	0	....	....
Oct.	50	2	68.5	2.7
Nov.	81	20	52.6	12.9
Dec.	51	25	24.8	12.2
Jan.	45	38	17.3	15.3
Feb.	50	47	16.8	15.8
Mar.	49	47	14.1	13.5
Apr.	34	33	8.9	8.6
Total....	381	212		

* To be compared with table 3. The same consistency in the monthly percentage of recurrent infections in the 381 patients observed from Sept. 1, 1929, to May 1, 1930, as in the 582 cases reported is shown even though there was no epidemic this season.

There were twenty-two cases of cervical adenitis, many of them being characterized by high and widely fluctuating temperature of a two and three weeks' duration.

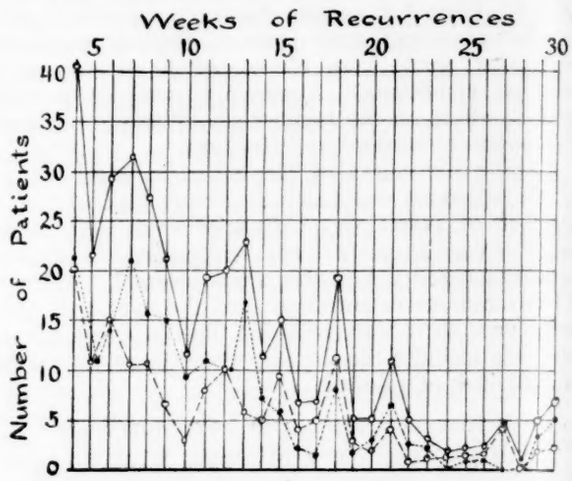
Ulcerative stomatitis was noted in ten cases.

There were 120 patients in whom bronchitis was the most pronounced symptom. Of these, forty-seven were of an asthmatic type.

There were fifteen cases of lobar pneumonia; of these, four developed empyema. The ages of the patients with empyema were 5, 6, 7 and 8 years. Cultures and smears of two cases showed a pneumococcus and two a hemolytic streptococcus, one of the hemolytic streptococcus patients having a double empyema. The four patients were operated on under local anesthesia and made a good recovery.

In sixty-five of the cases, nausea, vomiting, dehydration, pain in the abdomen or diarrhea were among the most pronounced symptoms.

There were two deaths: One child, aged 12 months, had a congenital malformation of the heart, developed a bronchopneumonia and died in twenty-four hours.



Weekly recurrent incidence of all the recurrences in the primary respiratory infections: solid line, total recurrences; dotted line, recurrences in children over 2 years of age; broken line, recurrences in children under 2 years of age.

The other case was rather interesting: A boy, aged 2 years, had a sudden onset of nausea and vomiting. The temperature was 106 F. He had a slight bronchitis. The white blood count was 20,500; neutrophils, 88 per cent. The child was thought to have an influenzal infection with a probable pneumonia. At the end of forty-eight hours the right elbow and right knee were swollen, inflamed and extremely tender. There were some slight cerebral symptoms. A blood culture was made. The next day the condition was worse; cerebral symptoms were more marked. A spinal puncture was done; cloudy fluid under pressure was obtained; smears and cultures showed a small gram-negative bacillus with all the cultural characteristics of Pfeiffer's bacillus, a blood culture showing the same organisms.

SUMMARY

1. Of 582 children with respiratory infections observed from Sept. 1, 1928, to June 1, 1929, 241, or 41.7 per cent, had one or more recurrent infections.

2. Weather conditions apparently had little or no effect on the number of primary or recurrent respiratory infections.

3. The recurrent infections were apparently as common in the patient who had had tonsillectomy and adenoidectomy as those who had not had the operation.

4. The monthly percentage increase of the total number of primary cases showed a marked variation, while the monthly percentage of recurrences in primary cases showed little variation.

5. Contact with individuals who had the disease seemed to have a marked influence on the number of primary infections.

6. Apparently, contact with individuals with the disease had little or no effect on the number of recurrent infections.

CONCLUSION

The consistency in the periodic recurrent incidence in respiratory infections, as observed over an eight year period, is more than suggestive of a periodic recurrent disease.

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ABSTRACT OF DISCUSSION

DR. FRANKLIN P. GENGENBACH, Denver: There seems to be an increasing number of primary colds in the winter up to a certain point, which in Birmingham reaches its peak about December. Dr. McLean has arbitrarily accepted for his statistics only cases he has seen himself and recurring infections in which there has been an interval of at least three weeks from the last visit he paid in the previous infection and the first visit in the infection following. It might have been perhaps more valuable to know the actual number of cold infections that the child had during the winter. It is quite evident from these figures that most of the colds come at a time when there is the greatest difference between inside and outside temperatures. There is no question that the tendency to colds is increased by the overheating of houses and apartments. As people come in contact with the low outside temperatures, either through the open windows or when they go outdoors, the tendency to colds is increased. An interesting observation was that in the children of older age, 2 or 3 years or older, there were practically as many colds and other respiratory infections in those who had their tonsils out as in those who had their tonsils intact. This again serves as a warning that when physicians advise having tonsils and adenoids removed they must not promise their patients too much. I am sure that too many men advise tonsillectomy simply on the basis of recurrent colds and without distinct evidence of infection of the tonsils. My own custom is practically never to advise tonsillectomy unless there is a persistent enlargement of the cervical glands that drain the tonsils. These recurrent colds coming after tonsillectomy involve the lymphoid tissue in the pharynx, particularly behind the posterior pillars, and often it becomes hypertrophied and cryptic. That is why there are just as many colds and sore throats and often just as many cases of cervical adenitis in those in whom the tonsils have been removed. That does not mean that no advantage is secured in having the tonsils and adenoids removed. My own observation is that, while these children may appear to get as many respiratory infections, they throw them off much more quickly and are much less likely to have severe complications.

DR. W. G. SMILLIE, Boston: Field studies have been made of the effect of environmental influences on colds in various parts of the world. The first was in Alabama, in an isolated community. The second was along the Labrador Coast, up the Northwest River about a hundred miles, in a community of Indians and traders, during the summer of 1928. The following year a study was made on an isolated island of the West Indies. The next field study will probably be conducted in Spitzbergen, under the arctic circle. The studies show that colds are less prevalent and much less severe in the tropics than in the temperate zones. The seasonal incidence of colds shows a very low rate in the summer months, a peak in October, with a fall and then a distinct peak in January or February, with scattered cases through the late spring. This indicates some relationship between changes in atmospheric temperature and colds. Even in the tropics, where the temperature varies only a few degrees from winter to summer, one finds the usual incidence curve noted in the temperate zones, in which temperature changes are much more abrupt. The relationship of rainfall, maximum and minimum temperature, barometric pressure and other factors with the incidence of colds has been studied without finding any correlation. So far as can be told from the bacteriologic observations, no known organisms are related to the incidence of epidemics of colds. There seems to be a definite relationship, however, between certain micro-organisms and the occurrence of complications of colds, colds of long standing, and recurrent colds. Pneumococci and influenza bacilli seem to be the chief offenders. The striking thing about the incidence of the disease in the tropics is that, although people have colds, these colds are very mild and are not complicated by middle ear disturbances, pneumonia, bronchitis or sinusitis.

Clinical Notes, Suggestions and New Instruments

TRAUMATIC PERFORATION OF ESOPHAGUS WITH MEDIASTINITIS; OPERATION AND RECOVERY

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A white woman, aged 60, with a negative past history, was admitted, Oct. 17, 1928, seven hours after she had swallowed some bottled horseradish containing particles of glass. She immediately felt a sharp pain in her throat, followed by pain in the epigastrium and right shoulder. She attempted to induce vomiting with her finger and brought up some bloody food particles. She came to the hospital because of an increase of pain in the throat. She had tenderness over the xiphoid cartilage and between the tenth and twelfth vertebrae. There was no abdominal tenderness or spasm.

Indirect laryngoscopy was negative. A roentgenogram was taken following a barium meal and revealed a slightly irregularly outlined opaque mass at the level of the clavicles, not at all typical of a diverticulum and probably an extravasation of barium into the tissue about the esophagus; there was an irregular area of increased density in this region which might possibly be a foreign body coated with barium. Esophagoscopy was performed and revealed a deep abrasion at the mouth of the esophagus at the level of the cricopharyngeus, and a sausage skin covered with barium was removed. The temperature, pulse and respiration were normal. Blood examination revealed white blood cells, 12,400; polymorphonuclears, 82 per cent, and hemoglobin, 76 per cent. The blood pressure was 150 systolic and 78 diastolic. Urinalysis showed an occasional cast and a trace of albumin.

The next day, October 18, she made the same complaint and her general condition appeared to be worse with a temperature of 99.4 F., pulse 100 and respirations 20. A roentgenogram on this day showed a greater retention of barium at the level of the clavicles. October 19, the patient's condition was poor; she was cyanotic and having labored breathing. There was some crepitation of the neck tissues and an examination of the chest suggested an extension to the right base. The medical advice was to permit the patient to have complete rest with no intervention. However, esophagoscopy was performed the same day and forceps were carried through the lacerated fibrinous area located to the right on the posterior wall at the level of the cricopharyngeus, with the liberation of a foul creamy pus under pressure.

External drainage was immediately decided on and local anesthesia was used. An incision was made along the anterior border of the right sternomastoid, and the esophagus was reached by dissecting through the planes of cleavage. In the region of the cricoid cartilage just posterior to the esophagus in the midline, foul pus was encountered which was found to extend well into the superior mediastinum. The foot of the table was elevated and two iodoform strips were placed as far as possible into the mediastinum and two along the upper portion of the esophagus. The wound was closed loosely with a few sutures. A Rehfuss tube was then introduced under direct vision and the patient was put to bed feeling more comfortable.

A roentgenogram then showed evidence of pleuritis with effusion in the right side of the chest and the mediastinum. A culture of the pus did not show any gas bacilli. The patient expelled the Rehfuss tube the same evening and was not fed by mouth for three days, after which she was started with fluids by mouth. The following ten days after operation the temperature varied between 98.6 and 102 F. daily, after which it remained normal. She received a therapeutic x-ray exposure for mediastinitis, October 20, and a roentgenogram, October 25, showed an increase of mediastinal shadow with some pneumonic involvement at both bases. Esophagoscopy, October 29, revealed a healed laceration. The patient was up and about, November 5,

* From the author's service at the Long Island College Hospital.
* Read before the otolaryngologic section of the Medical Society of the County of Kings, March 12, 1930.

and went home, November 8, with the neck wound still draining a small amount of foul pus.

December 2, the patient returned because of a weak spell associated with pain through the back of the neck and the upper part of the chest. The neck wound was still draining. She appeared pale and looked acutely ill. Her temperature was 101 F., pulse 135 and respirations 26. The following day her temperature, pulse and respirations were normal and she was fairly comfortable. She was discharged, December 14. Iodized poppy-seed oil in the neck wound showed the sinus to extend downward and medially to the cervical vertebrae. No communication with the esophagus could be determined and esophagoscopy was negative.

The patient returned again, December 26, because of severe pain in the left shoulder and the back of the chest. No cause could be found for this. The sinus in the neck was injected with Beck's paste several times and dyes were also used, but no possible connection with the esophagus could be made out. The discharge ceased, Jan. 14, 1929, and the wound healed shortly afterward. The patient was discharged, January 19, and has remained well.

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HUMAN INFESTATION WITH THE RAT TAPEWORM (HYMENOLEPIS DIMINUTA)*

ESTHER B. CLARK, M.D., PALO ALTO, CALIF.

In 1922, Riley and Shannon [1] thoroughly reviewed the literature covering human infestation with *Hymenolepis diminuta* and were able to find a total of sixty-one cases, many being from Japan. They added a case of their own in a 9 months old baby in Minnesota from whom twenty worms were recovered. Since the publication of their paper three more cases have been reported: Butka [2] reported one in a 16 months old baby who passed one worm; Momma [3] reported one in an 18 months old child who passed four worms; and Gundrum and Snyder [4] reported a case in California in a 15 months old boy who passed eight worms.

The possible sources of human contamination offer a field for speculation. The natural hosts of the adult worm are the mouse and the rat. The intermediate hosts, which harbor the cysticercoid, have been demonstrated to be the rat and mouse flea, beetles, moths, ear wigs, meal moths and cockroaches. The accidental ingestion of any one of these insects may thus result in human infestation with an adult tapeworm.

REPORT OF CASE

P. W., a boy, aged 4 years, from an intelligent, clean, well-to-do family, had long had a well developed case of pica. He ate dirt, sand, leaves, sticks and small toys whenever he could. He was born in New Hampshire and lived there until the age of 2 years, since which time he had lived on the San Francisco peninsula. For the past two years he had had periods of irritability and a rather consistent slump in his appetite. His general condition, however, was good. In the past six months he had three or four attacks of abdominal pain, lasting usually one or two days, with no localizing signs or symptoms. In June, 1930, he ate a small rubber sponge ball and was given a mild cathartic; in the resulting stool a single rat tapeworm was accidently discovered. He was then put through a regimen with oleresin of aspidium and passed fourteen worms in one mass. These worms were from 10 to 18 inches in length and about one-sixth inch in width. The stools contained innumerable eggs which were typical for *Hymenolepis diminuta*. Two weeks after the administration of the vermifuge a search of the child's stools showed no eggs.

In the three months that have elapsed since the passage of the worms the boy has shown a marked improvement. His appetite is vastly better, he is not irritable, the attacks of abdominal pain have not recurred, and he has made a good weight gain.

COMMENT

The source of this child's infection is obscure. As far as was known, there were no rats at any time in his environs; however, about a year prior to the incident two mice were trapped in the house. In view of the marked pica it would seem that at some time the boy swallowed one or more insects that were harboring the cysticercoids of *Hymenolepsis diminuta* which resulted in the development of fifteen adult worms in his intestinal tract. He may, of course, have passed other worms prior to my observations.

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* From the Department of Pediatrics, Stanford University School of Medicine.

1. Riley, W. A., and Shannon, W. R.: The Rat Tapeworm, Hymenolepis Diminuta, in Man, J. Parasitol. **8**: 109 (March) 1922.
2. Butka, H. E.: Infestation with Hymenolepis Diminuta, J. A. M. A. **82**: 875 (March 15) 1924.
3. Momma, Kenji: On a Case of Hymenolepis Diminuta Rud. 1819, Ann. Trop. Med. **22**: 1 (June) 1928.
4. Gundrum, F. F., and Snyder, J. R.: Hymenolepis Diminuta, California & West. Med. **26**: 350 (March) 1927.

Special Article

TECHNIC OF THERAPEUTIC EXERCISE

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Therapeutic exercise is the scientific supervision of bodily movement, with or without apparatus, for the distinct purpose of restoring normal function to diseased or injured tissues. There are two types of therapeutic exercise—passive and active.

Passive exercise is that form of bodily movement which is carried through by the operator without the assistance or resistance of the patient. Mennell [1] uses the term relaxed movement. Passive movement should be administered with great care, with the arm or leg to be manipulated rightly held and the patient completely relaxed and pumping movement avoided. The occurrence of a muscle spasm is a danger signal. If such a spasm occurs the operator should stop immediately. It should be remembered that a slight tightening of the muscles precedes pain. Therefore, to secure the best results all movements should be well within the limit at which pain occurs. It should be kept constantly in mind that one movement through its fullest range is much better than a series of movements through a shorter range. In this way it is possible to produce gradually an increase in the range of movement.

The chief aim of passive movement is to maintain suppleness and by so doing to prevent contractures and the formation of definite adhesions or the general matting of soft tissue. In this manner passive exercise of muscles prepares them for active movement.

Stretching of contractures and old adhesions in chronic conditions should not be confused with passive movement. The object of stretching is to loosen contracted ligaments, muscles and adhesions in stiff joints. It is to be used only after the inflammation of the joint has subsided. The technic of such a procedure should be a slow, steady and gradually increasing pull by the operator or with gradually increasing weights. The increase in tension should be made after periods of time ranging from ten minutes to an hour, depending on the reaction of the patient. Joint soreness may be produced by such a manipulation, and a short application of heat with light massage will help materially in making the patient comfortable. As a rule, any pain that passes off in an hour is not detrimental to the

1. Mennell, J. B.: Massage, Its Principles and Practice, Philadelphia, P. Blakiston's Son & Co., 1920.

final success of the treatment. If there is an increase of swelling and pain or the range of motion is less the next day, too much has been attempted. The angle of movement should always be recorded by using a goniometer, and never estimated by the eye of the operator. Records of movement estimated by the eye of the operator are inaccurate and worthless. This is especially true when the stretching has been forceful. However, splints may be used and a light pull maintained day and night. This should be increased gradually and kept constantly within the patient's capacity; otherwise much pain and discomfort will be caused. Much valuable time may be saved by properly applied stretching.[2]

There is a highly beneficial maneuver which can be applied at this stage in the treatment. The procedure is termed static exercise and can be practiced by the patient at home while his arm is in a splint. It cannot be classed under the heading of movement because joint motion does not take place. By it is meant the alternate contraction and relaxation of a muscle or group of muscles without movement of the joint. This type of exercise may be difficult for the patient to learn. It should be practiced under the watchful eye of the operator until the patient has accomplished it. Static exercise is used in the early stages of acute traumatic injury or when it is impossible to obtain joint movement in chronic cases. Great benefit is derived by its use in restoring muscle tone and normal strength and in maintaining vitality.

Active exercise is one of the most valuable adjuncts available in the restoring of normal muscle function. It must, however, be properly applied and in gradually increased doses, depending on the reaction of the patient, in order to insure beneficial results.

A joint must be considered physiologically as a whole with no one component being injured without having an effect on the whole mechanism. An injury to the joint synovial membrane, joint cartilage, capsule, ligaments, bone or muscles may even cause atrophy and diminution of the number of anterior horn cells of the spinal cord. Leriche [3] believes that traumatic arthritis is caused by a disturbance of the sympathetic nervous system, so that the usual temporary local hyperemia causes an absorption of lime salts from the bones with a production of osteoporosis rendering pain, tenderness and limitation of motion. It is evident that all structures producing motion, even the nerves, must be considered part of a joint. It should always be remembered that nerve and muscles are parts of a unit, the muscles having the power of contractility and producing motion, and the nerve having the power of irritability and conduction. If a muscle is properly rested and made to resume work gradually within functional limitations, it does not waste.

The normal nerve impulse transmitted to the muscle through the nerves will do more than any mechanical means, such as massage, passive movement and electrically applied stimuli, to restore physiologic action and maintain the process of repair.

Active exercise is that form of bodily movement which is carried through by the patient, with or without the personal supervision of the operator, and is divided into assistive, free and resistive exercise.

Assistive exercise is that form of bodily movement which the patient performs, assisted by the operator or some mechanical means such as a pulley and weight. Its chief objective is to enable the patient to accomplish more than he could do unassisted. Assistive movement calls for unusual judgment on the part of the operator, who should aid only when the muscle is too weak to accomplish its movement. If fibrillation of muscles occurs, the muscles have been given too great a task and assistance is needed. However, when fibrillary contractions do occur, it is advisable to cease and obtain complete relaxation before treatment is resumed. The operator will then be able to give assistance at the right moment, thereby preventing further fibrillation. Such fibrillation usually appears during the first third of the arc movement, and assistance is usually required during this stage. Progress must be watched carefully. The operator should increase the range of movement daily and should gradually develop the type of exercise from assistive to resistive. The capacity limits of the patient must constantly be kept in mind. If the muscle capacity of the patient has been exceeded there is pain, swelling and possibly an increase in local heat with muscle spasm or a slight stiffness. These symptoms indicate an excessive treatment. The amount of work must then be decreased until these symptoms have disappeared.

Free exercise follows the assistive type and is defined as that form of bodily movement which is carried through by the patient against the least possible resistance. To do this the body of the patient and the injured muscles are placed in such a position that gravity exerts no resistance to graded arc movements of the arm or leg to be manipulated. The range of movement should increase as the strength of the muscles increases and as adhesions are broken down.

True free movement is difficult to obtain and in reality the line of demarcation between free and assistive movement is not sharply defined. Free movement is obtained by eliminating the resistance of gravity and the resistance of friction. One method of obtaining such movement is to place the patient in a horizontal position so that motion is in the horizontal plane. True free movement can be more easily obtained by the use of a sling or by placing the limb in a warm water bath, or, lastly, by the use of a smooth rectangular board, well powdered and placed in a horizontal position. Each of these methods tends to reduce the friction to a minimum and produce truly free movement.

Resistive exercise is that form of supervised bodily movement with or without apparatus which offers resistance to muscle action. All resistive exercise should be guided in accordance with Schwann's law, which states that the strength of muscle is reduced in direct proportion to the state of contraction or to its relative length. The resistance applied, therefore, must be different for the different phases of the movement, least during the beginning and ending thirds, and greatest during the middle third or optimum of the muscle contraction. Correct resistance is often the only way to make one muscle group work alone and exclude its antagonists.[4]

As the range and strength of musculature increases, exercises at home can be prescribed and apparatus and different forms of curative occupational therapy can be used.

2. Clayton, E. B.: Physiotherapy in General Practice, New York, William Wood & Co., 1928.

3. Leriche, R.: The Problem of Osteo-Articular Diseases of Vasomotor Origin, J. Bone & Joint Surg. **10**: 492 (July) 1928.

4. Buchholz, C. H.: Therapeutic Exercise and Massage, Philadelphia, Lea & Febiger, 1917.

No patient should be permitted or told merely to exercise his arm. It is the duty of every physician prescribing exercise to give definite directions as to the amount and kind. In the case of the patient with average intelligence, the anatomy of the part to be exercised and the reasons for the exercises should be explained to him. To those who understand considerable human anatomy, definite instructions should be given.

In giving directions for exercises it should be impressed on the patient that although heat, massage and electrical stimulation are used for his weak muscles, these are only to increase the circulation and nothing will increase muscle power but active exercise, which requires volitional effort on his part. To insure the proper regimen of treatment, definite written instructions for exercises should be given the patient and proper occupational therapy prescribed.

Muscle reeducation is that form of therapeutic exercise given to muscles in which the neuromuscular coordination has in some way become partially destroyed. The reflex arc has become involved, making it impossible for the muscles to move by means of the reflex mechanism. As a result, coordinated movement is lost. To reeducate muscles under such conditions two things are necessary: first, to reestablish a better coordination between the remaining nerve fibers and cells supplying the affected muscle, and, second, to secure the contraction of the desired muscle, however feeble.[5]

Mackenzie says that if a muscle is weakened or paralyzed, whether from injury of muscle, nerve or central cell, it is rested when its opponent is in a state of relaxation or elongation beyond the state normally regarded as necessary to produce a condition of equilibrium with its opponent. This is the zero position. Reeducation of a paralyzed muscle begins at zero and is the encouragement of voluntary muscle movements within functional limitations. The amount of work at this minimum may be slight, but it is the maximum function of the muscle at this time, and the muscle may soon become exhausted.[6]

Curative occupational therapy is a form of therapeutic exercise which requires a series of specific voluntary movements, initiated by the patient, which form component parts of a more complex and coordinated movement. This exercise is designed for the express purpose of securing definite end-results and is a direct incentive for sustained effort.

The ordinary physical treatment given to a patient lasts, at the most, only an hour. The mechanical exercises given have certain definite limitations. The human body is more than a machine, and the formal repetition of a movement either with or without an apparatus is not of maximum therapeutic value in increasing the amount of movement in a stiff joint or as an integral part of a large coordinated movement. There is no pyschologic stimulant for personal initiative, or for sustained effort. The patient can be told to exercise, but unless occupational therapy is used there is no incentive and interest provided to continue the exercise.

In physical therapy the patient's attention is focused on the injury while in occupational therapy his interest is in the work.

5. Jones and Lovett: Orthopedic Surgery, New York, William Wood & Co., 1929, 2nd Edition.

6. Mackenzie: The Action of Muscles, ed. 2, New York, Paul B. Hoeber, Inc., 1930.

THERAPEUTIC EXERCISE FOR THE SHOULDER JOINT

The shoulder joint, anatomically considered, is peculiarly liable to injury. It is a known experimental fact that, when movement of a joint is stopped and the part immobilized, muscular atrophy takes place within two hours. Therefore, in view of the importance of the musculature of the shoulder joint relative to injury, it may be stated that one of the most essential elements in the treatment is early exercise because the restoration of function of the shoulder is dependent to a large extent on proper muscle action. Physical therapy plays an important part in the restoration of its function. Of the forms of physical therapy used, therapeutic exercise stands out most prominently in assisting in the more rapid restoration of normal function.

It is well to know just what structures are involved. For the purpose of more easily understanding them, they can be divided into periarticular and intra-articular, the former representing all those without the capsule and the latter those within the capsule. It is necessary not only to know what parts are injured but also to determine the extent of injury. These may be a simple strain of the muscles due to overuse or a complicated fracture dislocation with extensive involvement of all structures both periarticular and intra-articular. Severe injuries produce a marked extravasation of coagulable fluid into the surrounding tissues which results in the formation of fibrous adhesions. Since the muscles of the shoulder joint hold it in its normal position, an injury to them becomes a serious matter. In addition, the intra-articular surfaces may be injured, as for example a fracture into the joint causing damage to the synovial membrane and cartilage. This, again, produces adhesions within the joint and increased synovial fluid. It is this destruction of tissue, the extravasation of fluid, and the subsequent formation of adhesions that result in muscle spasm and limitation of movement. It is, therefore, toward the restoration of their function that the treatment is aimed.

Mackenzie, in his classification of muscles moving the humerus, points out the important fact that the abductors of the shoulder joint are the relatively weak deltoid and the supraspinatus and that the adductor is the strong pectoralis major. The external rotators are the weak infraspinatus and the teres minor, while the internal rotators are the strong latissmus dorsi and the subscapularis. With this in mind, it is well in shoulder joint injuries requiring prolonged immobilization to put the arm in abduction and external rotation. This can be done in an aeroplane splint or in a plaster cast with the cover of the cast cut so that it can be raised. The muscle origin, insertion and action determine the splinting. Therefore, if after a shoulder joint injury the arm is bound to the side, the anatomy, physiology, and pathology are ignored. Too frequently, this position is maintained for three weeks or more with the strong muscles shortened and the weak ones stretched, and in addition the weight of the upper limb dragging on the weakened deltoid supplied by an injured nerve.

In intra-articular involvement a cardinal point brought out by Dr. Lovett [5] is that the secretion of the synovial membrane is stimulated by motion of the joint and diminished by rest. With an injury to the synovial membrane, the absorption power and circulation in the surrounding area is seriously affected. Therefore, if the joint is moved too soon with such a blockage, the only result obtained will be an increase in fluid within

the joint cavity producing more pain and increased pathologic changes. Such a joint requires rest to permit the excessive fluid to be absorbed. With a complicating fracture into the joint, it can be readily seen that active movement must be delayed and that carefully regulated passive motion must be instituted to prevent adhesions from forming. Active exercise should be encouraged only when the bones have had sufficient time in which to unite. In fractures about the head of the humerus the same principle holds true, and when passive motion is used the fracture should be closely splinted and well supported.

Other structures that may be injured in the periarticular portion of the shoulder other than the ligaments, tendons, muscles, blood vessels and nerves are the bursae, the chief of which is the subacromial or subdeltoid, located between the under surface of the deltoid muscle and the outer surface of the capsule. Because of its close association to the joint, it is peculiarly liable to injury and requires special treatment.

Before prescribing therapeutic exercise for shoulder joint conditions, the underlying pathologic condition must be understood. This means that a thorough examination and diagnosis must be made. A careful inspection and palpation of this region interpreting the limitation of motion in terms of muscle origin, insertion and action will often prevent the misinterpretation of a roentgenogram. There are no injuries about the body in which a knowledge of muscle action is more important than in the diagnosis and treatment of shoulder injuries. A joint must be considered physiologically as a whole with no one component being injured without having an effect on the whole mechanism. It is necessary to understand the various movements of the shoulder joint and the extent of their range. It is well in this connection to compare the movements with the sound side. Beevor's classification is given herewith for the normal shoulder joint.[5] These movements, summarized, are flexion, extension, hyperextension, abduction, adduction, horizontal adduction and abduction, and internal and external rotation. Each of the movements, together with the number of degrees possible, is given for the normal shoulder. It is to be understood that different individuals may differ with regard to extent of movement and, therefore, it is always necessary to compare the injured side with the sound one.

Flexion of the humerus: Place the arm at the side and raise it to front horizontal, and then above the head until vertical. This is the anteroposterior plane and produces an arc of 180 degrees. This is the normal range for flexion.

Extension of the humerus: With the arm above the head in extreme flexion, move it downward and forward to its original position at the side. This brings the arm through the same anteroposterior plane and the range is through the same 180 degree arc.

Hyperextension of the humerus: With the arm at the side, move it backward as far as it will go through the same plane. The average degree of movement for this distance is 45 degrees.

Abduction of the humerus: With the arm at the side, carry it laterally to a side horizontal position at a distance of 90 degrees. At this point the movement in the shoulder joint is stopped by the tension of the capsule. From then on the movement is carried out by the scapula until it arrives in a vertical position above the head, covering a distance of 180 degrees.

Adduction of the humerus: The arm is again carried down through the same lateral plane, through the same number of degrees to the side of the body.

Horizontal adduction and abduction: The arm is placed in side horizontal position and the arm is then brought forward to a front horizontal position. This is termed adduction and the arc range is 90 degrees, which is much extended by scapular movement. Abduction is just the opposite of adduction and through the same plane and a 90 degree range.

Internal and external rotation: The arm is abducted to a horizontal position, the elbow flexed and the forearm at right angles, which brings the shoulder joint in a position of external rotation. Bringing the forearm forward and downward produces internal rotation. The arc is 90 degrees in this plane. With the arm in partial abduction and the forearm extended, the degree of rotation increases to 135 degrees.

It is important to note here that the scapula takes part in practically all movements. The determination of the actual range of shoulder movements is difficult and inaccurate. As the mobility of the scapula is highly variable, all angular movements in and about the shoulder joint must be necessarily approximate.

Each of these movements should be done and the number of degrees measured and properly recorded. In order to obtain some idea of the degree of disability, a record of the progress should be made at definite intervals of time. If the movements are found to be limited in all directions, there is in all probability an arthritis. If, however, there is limitation in only a few directions, it is probably a periarticular injury and limited to the soft parts. If the second examination shows no increase in range of movement there may be complications and another thorough examination should be made.

If the range steadily increases even though there is some occasional pain, progress is being made in the right direction.

ROUTINE MANAGEMENT OF A SPRAIN OF THE SHOULDER JOINT

The first objectives are to control the hemorrhage, to prevent the overstretching of the weaker and injured muscles and the contracture of the stronger antagonists, and to encourage healing.[7]

The patient is placed on a padded table in the supine position with the arm resting on a smooth rectangular board. The arm is carefully moved to a horizontal position and the forearm flexed and in external rotation. The whole region is then covered smoothly with cotton or sheet wadding, and over this a firm spica is applied. An aeroplane splint is then put on with the arm in abduction and external rotation, the position of greatest physiologic rest. Within three hours the spica is removed and in its place an elastic ace bandage is put on. It is well to apply the ace bandage during the early stages of treatment for the reason that the blood vessels are allowed to relax and in this way a fresh blood supply is brought to the part, and the reapplication assists in squeezing out the extravasated débris. By this method the hemorrhage has been controlled and the weaker muscles have been placed in a state of physiologic rest, and by so doing the stronger antagonists have been prevented from forming contractures. This position naturally favors healing, by placing the injured muscles in a relaxed position.

The second objectives are to prevent stiffness due to the formation of adhesions from immobilization, to restore the circulation to normal, to rid the part of extravasated fluid, and to prevent the atrophy of the muscle.

7. Whitelocke, R. H. A.: Sprains and Allied Injuries of Joints, Oxford Medical Publications, 1910.

Just as soon as the acute symptoms have subsided and healing has progressed, it is time to start therapeutic exercise in conjunction with other preliminary physical therapy measures. At the end of from twenty-four to seventy-two hours, the acute symptoms in most cases have abated. The patient is placed in a position of complete repose, lying on a padded table in the supine position, with the injured arm on a smooth rectangular board which has been powdered. At this point it is well to be certain that the patient is completely relaxed. For this reason heat and a light stroking massage are used,[1] just before the aeroplane splint is removed. The influence of and use of external heat is well set forth in a report by the Council on Physical Therapy of the American Medical Association.[8]

The tissues are put in a condition to benefit by massage and mobilization. Dry heat is the form used and may be given with a radiant light lamp for a period of from half an hour to an hour. This is followed by very light stroking massage, which helps materially in giving relaxation.

With complete relaxation, passive movement is now started. The patient is properly grasped by the operator with the arm in the same position as it was in the aeroplane splint. One hand of the operator firmly takes hold of the arm just above the elbow and the other grasps the hand. The arm is first brought through just one or two movements in the horizontal plane, the operator constantly on the alert for muscle spasm. It must be borne in mind in using passive movement that it is much better to bring the arm through to its capacity for movement. When muscle spasm occurs one should stop and hold at that point for a few moments, say to the count of five.

The joint range having been increased by means of passive movement, the way is prepared for active exercise. The first forms of active exercise used are of the assistive and free types. With the arm in the same position as for passive movement and resting on the same smooth, well powdered, rectangular board, the operator adducts the arm to the range previously acquired by passive exercise. The patient then abducts it to side horizontal positions. Fibrillation of the deltoid may occur and, if such is the case, assistance is given. Here the operator gently produces light pressure upward at the elbow and helps the deltoid to contract. As the movement gains power, the patient completes the arc without assistance and this is termed free movement.

Each day the amount of assistance is lessened and true free movement is instituted. By so doing the normal neuromuscular response is called into play and with it increase in the range and power of muscular movement. In the same plane, light resistive exercise may be applied by gentle attempts to stop abduction. Thus there is gradual progression from assistive exercise through to the resistive type.

Resistive exercise can now be started in earnest, and the operator can work in all planes, first assisting and later adding resistance. At this point the patient can gradually be raised to a sitting position, and by so doing the resistance of gravity is added. Assistive exercise may have to be combined with the resistive as the patient is raised, assistance being given in the first and last thirds of the arc of movement.

8. Pemberton, Ralph; Weisenburg, T. H.; Gill, A. B., and Schamberg, J. F.: The Influence and Therapeutic Use of External Heat, J. A. M. A. **89**: 1243 (Oct. 8) 1927.

The range and strength of the muscles of the shoulder have been increased now in all planes because of the carefully regulated assistive, free and resistive exercise. The operator's work is now combined with a series of exercises which the patient is taught for home use. The following are suggested exercises. The particular exercises to be used should be underlined. The number of times each movement is to be used must be indicated.

HOME EXERCISES FOR THE SHOULDER

1. While the shoulder is in the splint, contract deltoid and then relax without moving the shoulder joint or using other muscles. This is to be done as often as the patient feels disposed during the day. Stop just as soon as the muscle tires.

2. Lying on the back, the arm and shoulder on a powdered cardboard, in the same position as in the splint, forearm supported, the operator adducts the arm a few degrees, and the patient brings it to the original position. Increase the range of motion.

3. Same position as 2, revolve the forearm until the back of the hand touches the table.

4. Same position as 2, move the arm across the body so that the hand touches the opposite shoulder.

5. Lying on the back with the arm at the side and the forearm flexed at right angles, bring the arm forward and up and return.

6. Lying, face down, the hands in back of the neck: (*a*) Raise both elbows and the head from the table without raising the body. (*b*) Raise the elbows with some one putting pressure on the elbows.

7. Standing, with the arms at the side, swing to the front, horizontal and then above the head and return.

8. Standing, with the hands clasped behind the back, fingers interlocked, the palms facing up, turn the palms in and down, and extend the arms to the rear at the same time.

9. Standing, with the hands at the side, swing the arm to side horizontal and then above the head and return.

10. Standing, with the arms in the front horizontal position, swing to the side horizontal position, to front horizontal position and return to original position.

11. Shoulder shrug.

12. Standing with arms in side horizontal position, move arms in small and large circles and in both directions.

13. With the arms in side horizontal position, rotate arms so palms are alternately up and down.

As the strength of the patient increases, more resistance can be added with books or dumb-bells, starting with light weight and increasing the weight as the capacity of the patient increases.

The pulley weights can be used to increase the resistance.

Curative occupational therapy for shoulder cases should be definitely prescribed. It can be used in any place with a little ingenuity. For instance, "braid weave" rug weaving may be used. No shuttle or beater is necessary and no sewing is required. The method does not require a complicated loom. The weaving, partaking somewhat of basketry, is fascinating and simple.

The loom can be home made. It is 30 by 50 inches, made of 1½ by three-fourths inch wood. A series of one-fourth inch slits at the top and bottom half an inch apart accommodate the warp. Along the inside a half-inch from the inside edge of the loom are brass one-fourth inch curtain rods to hold the weaving in perfect alinement and to insure a straight edge to the rug. The weaving is done with rags, which may be colored and a pattern followed. These looms may be made in various sizes and placed in various positions to

conform with the patient's strength and to the joint movements required. By placing the loom high on a wall shoulder flexion, external rotation and abduction of the shoulder may be obtained. These looms may of course be purchased complete. After proper instruction the patient can use this loom at home.

CONCLUSIONS

In shoulder joint cases, therapeutic exercise is used according to the principles previously mentioned, starting with passive movement, progressing to assistive exercise and using muscle training if necessary and then using free and resistive exercises, which include occupational therapy.

(To be continued)

The Chemical Laboratory

THE FOLLOWING IS A REPORT OF THE AMERICAN MEDICAL ASSOCIATION CHEMICAL LABORATORY. PAUL NICHOLAS LEECH, Director.

ALBUTESTA

A Proprietary Reagent

Albutesta is a coined name for a chemical reagent to detect albumin in urine. The makers of this product, Menley & James of London, England, and also of New York, have been noted in the past for unscientific proprietaries. For instance, at very frequent intervals physicians receive through the mail free samples of "Iodex," a black ointment sent out in small, circular, aluminum boxes. A few years ago a claim was made by the firm that this ointment contained 5 per cent of free iodine, minus the objectionable features that go with free iodine. Work done in the A. M. A. Chemical Laboratory showed, first, that the product did not contain iodine in the free form but in the combined form and, secondly, that there was less than 5 per cent of total iodine present (THE JOURNAL, June 19, 1915, p. 2085). Again in 1919 the laboratory examined market specimens of "Iodex" and found, as before, a deficiency in iodine content, about three fifths of the amount claimed. It was pointed out that it was impossible to have free iodine present in sufficient quantities to be therapeutically efficient and not get skin stains or irritation. Later the laboratory analyzed the companion proprietary, "Liquid Iodex," which was claimed to be a nonirritant preparation of iodine and to contain "free iodine." On examination at that time this product was found to contain only about 0.16 per cent of free iodine and about three fifths of the total iodine claimed.

Now another proprietary of this firm is extensively advertised to physicians, Albutesta, a new test for albumin. Some of the claims made for the preparation are as follows:

"Dependable" "Non-poisonous" "Does not stain the hands" "Just a few drops in the test tube reacts immediately. No boiling, no acid. Takes but one-quarter the time of the older tests. Its dependability and simplicity suggests home testing in maternity cases." The price for this so-called new test for albumin is $1.

Original packages of Albutesta were purchased by the A. M. A. Chemical Laboratory and subjected to examination. In each trade package there was a one ounce flint bottle containing 33 cc. (approximately 1 fluidounce) of a colorless liquid, a crudely constructed medicine dropper and a small test tube. The solution was odorless and possessed a distinct sour taste. The reaction of the mixture to litmus was distinctly acid.

No information concerning the composition of Albutesta[1] appeared on the trade package. No circular accompanied the product.

1. The following appeared on a sticker pasted on the trade package:
"Formerly known as OXYDOL
Name changed to
ALBUTESTA
Made by
Menley & James, Ltd., 70 West 40th St., New York."

Qualitative tests indicated the presence of an organic acid, indicative of sulphosalicylic acid.

The results of the quantitative determinations were as follows:

Specific gravity at 25 C	1.078	
Total solids (residue on evaporation)	17.55	per cent
Ash	0.02	per cent
Sulphosalicylic acid (by titration)	16.99	per cent

It appears, therefore, that Albutesta is simply a proprietary name for a preparation having the essential qualities of a 20 per cent aqueous solution of sulphosalicylic acid. Albutesta sells for $1. The cost of ingredients of 1 ounce of sulphosalicylic acid solution, 20 per cent, is about 5 cents.

In any chemical analysis it is almost axiomatic that the analyst must know the composition or definite attributes of the reagent he is using if he expects to be at all scientific. It is, therefore, stupid to make chemical tests, on which clinical interpretations are to be made, with a reagent the composition of which is not known and under conditions in which there may be interfering substances. The limitations as well as advantages of any reagent should be known. If one desires to use the sulphosalicylic acid test for albumin he should use a solution of known strength and composition.

Roch[2] was the first to use the substance as a precipitant for protein in the urine and at that time sulphosalicylic acid impressed many workers, primarily MacWilliam,[3] who demonstrated its differential value. Witthaus[4] some years later in his manual described the use of Roch's reagent (sulphosalicylic acid). However, Wood[5] elucidated a qualitative test using a 20 per cent aqueous solution. Since then various methods of using sulphosalicylic acid in determined strengths for determining albumin in urine have been described by biochemists, such as Folin[6] and Exton.[7] Hence, its use in clinical chemistry is *not* new.

2. Roch: Pharmaceut. Centralbl. **30:** 549, 1889.
3. MacWilliam, J. A.: Brit. M. Jour. **1:** 837, 1891; ibid. **1:** 115, 1892.
4. Witthaus, R. A.: The Medical Student's Manual of Chemistry, Ed. 6, 1906, p. 737.
5. Wood, F. C.: Chemical and Microscopical Diagnosis, ed. 3, 1911, p. 501.
6. Folin, Otto: Laboratory of Biological Chemistry, New York, D. Appleton & Co.
7. Exton, W. G.: A Simple and Rapid Test for Albumin and Other Urinary Proteins, J. A. M. A. **80:** 529 (Feb. 24) 1923; J. Lab. & Clin. Med. **10:** 722 (June) 1925.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

McKESSON'S VITAMIN CONCENTRATE OF COD LIVER OIL.—A cod liver oil concentrate having not less than eleven times the minimum vitamin A potency of cod liver oil, U. S. P., and not less than eleven times the vitamin D potency of a potent cod liver oil used as a standard.

Actions and Uses.—McKesson's vitamin concentrate of cod liver oil possesses properties similar to those of cod liver oil so far as these depend on the fat soluble vitamin content of the latter.

Dosage.—From 3 to 6 drops three times daily. A glass dropper is included with the market package, designed to deliver one minim per drop.

Manufactured by McKesson & Robbins, Inc., Bridgeport, Conn. U. S. patent No. 1,690,091 (Oct. 30, 1928; expires 1945). No U. S. trademark.

The vitamin A potency of McKesson's vitamin concentrate of cod liver oil is determined by the method of the U. S. Pharmacopeia; when assayed by this method the product is required to have 5,500 vitamin A units per gram. The vitamin D potency is determined by comparison with a potent cod liver oil containing in each 0.75 Gm. 1 rat unit of vitamin D, the rat unit being defined as that amount of vitamin D which, when uniformly distributed into a standard vitamin D deficient diet—ration 2965, *J. Biol. Chem.* **64:** 263, 1925—will produce in the metaphyses of the distal ends of the radii and ulnae of standard rachitic rats a narrow and continuous line of calcium deposits; when assayed by this method the product is required to have 146 vitamin D units per gram.

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SATURDAY, NOVEMBER 1, 1930

RECENT STUDIES IN PERNICIOUS ANEMIA

The greatly accentuated interest that has been displayed in medical circles within the last few years toward the problems of the anemias, and particularly toward pernicious anemia, has brought the blood cells into renewed prominence. Attention has been focused notably on the reticulocytes, the primitive types of blood cells that are an index of the response of the hematopoietic tissue of the bone marrow. It has been asserted that the fundamental defect in hematopoiesis during a relapse in pernicious anemia is due to the inability of the primitive red blood cells of bone marrow to differentiate normally into the adult state. When the regenerative activity of the bone marrow becomes restricted, the numbers of red blood cells in the peripheral blood decrease, and many of those present are abnormal. The liver, kidneys and stomach contain a substance that appears to stimulate the maturation of the primitive red blood cells and consequently to have a therapeutic action in pernicious anemia. A noticeable response signifies the onset of a satisfactory remission.

Recent investigations in two laboratories particularly devoted to the problems of pernicious anemia—namely, the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, and the Thorndike Memorial Laboratory of the Boston City Hospital—throw new light on the probable life of the reticulocytes of the blood. Heath and Daland [1] of Boston have followed the changes in these young (rather than degenerative) forms of the adult red blood cell in vitro at 37 C. and in the pleural cavity of animals under conditions resembling to some extent those that are found in the natural circulating medium. The reticulocytes exist thus for from one to five days. They remain for a much longer time when kept in the icebox or at room temperature. The changes that they undergo presumably represent maturation rather than destruction. That the reticulocytes lose their reticular substance and become adult erythrocytes is shown by the fact that the total number of red cells in the incubated specimens of blood does not diminish as the reticulocytes disappear. Evidence is presented by Heath and Daland to show that this must be the case in the blood stream, at least of patients with pernicious anemia at the time of the reticulocyte response following liver therapy.

The Boston investigators remark that whether the maturation of reticulocytes in the blood stream is the same as the maturation that takes place normally in great part in the bone marrow is difficult to determine. A few reticulocytes are found in the circulation in health, and at birth considerable numbers are often present. Heath and Daland have also approached the question of the disposal of the basophilic substance that has disappeared from the young cell in the course of its maturation. It is probable, they believe, that the basophilic substance diminishes gradually in amount as the cell reaches maturity. The observation of the increase of granules in erythrocytes with the decrease of reticulocytes suggests that this is a normal occurrence in the maturation of reticulocytes. The consumption of oxygen by the reticulocytes leads to the possibility of the disposal of the basophilic substance by normal catabolic processes. In studies at Ann Arbor [2] it was estimated that from two to four days is required for the differentiation of reticulocytes in the blood into mature erythrocytes. According to Riddle [2] the rate at which reticulocytes are liberated from the bone marrow into the blood appears to be a factor of importance which influences the rate and magnitude and velocity of the reticulocyte response. The rate of the liberation of the reticulocytes into the blood seems to be proportional to the rate at which they are formed from the more primitive red blood cells within the bone marrow and to the numbers of reticulocytes being formed there. The various students of pernicious anemia agree that, aside from the presence of inhibiting complications in patients with pernicious anemia, the two principal factors that regulate the reticulocyte response to liver therapy are the condition of the hematopoietic tissue of the bone marrow before treatment and the amount of the active principle contained in liver used in treatment.

Indication of some of the metabolic changes incident to blood regeneration has been supplied by Riddle and Sturgis.[3] Endogenous uric acid is manufactured and excreted in large quantities during the period of the reticulocyte response. The amount excreted in excess of the normal excretion is proportional to the increase in the numbers of red blood cells in the blood. It appears that, on the average, with the increase of a million red blood cells per cubic millimeter of blood approximately 10 Gm. of endogenous uric acid is excreted in the urine. The destruction of normoblast

1. Heath, C. W., and Daland, Geneva A.: The Life of Reticulocytes, Arch. Int. Med. **46**: 532 (Sept.) 1930.

2. Riddle, M. C.: Pernicious Anemia, Arch. Int. Med. **46**: 417 (Sept.) 1930.

3. Riddle, M. C., and Sturgis, C. C.: The Endogenous Uric Acid Metabolism in Pernicious Anemia, J. Clin. Investigation **7**: 498, 1929. Riddle, M. C.: The Endogenous Uric Acid Metabolism in Pernicious Anemia, ibid. **8**: 69, 1929.

nuclei appears to be the source of this endogenous uric acid, and it seems likely, we are told, that the uric acid of endogenous origin normally excreted in the urine is derived principally from this source. Perhaps the endogenous uric acid output will become a reasonably reliable biochemical index of blood production during early remission. The rise in concentration of uric acid of endogenous origin in the blood and its excretion in increased amounts in the urine apparently have the same significance as the increase in the numbers of reticulocytes in the blood, and, according to Riddle, can be detected earlier, as changes in the endogenous uric acid metabolism usually precede similar changes in the reticulocyte concentration in the blood by one or two days.

It is generally conceded that iron therapy is illogical in pernicious anemia. Iron is stored in the body despite the anemia. According to Riecker [4] there is present in blood serum a partly diffusible iron compound the estimation of which may be used to determine the presence and degree of iron starvation in disease and likewise the effect of iron medication. The amount of serum iron is increased in hemolytic diseases of the blood and decreased in the presence of long continued hemorrhage or a dietary deficiency of iron. In pernicious anemia, the level of the serum iron usually is higher than normal but becomes normal during remissions in the disease.

COFFEY-HUMBER TREATMENT FOR CANCER

Following the subsidence of the first flare of publicity, during which sufficient evidence was developed to indicate that the Coffey-Humber method of treating cancer is in no sense of the word "a cure" and that even its efficiency in treatment is exceedingly doubtful, the medical profession settled down to await the careful trial over a long period of time that the discoverers of the method now seem to be anxious to make. This, of course, is necessary for the final decision. Late in August Drs. Coffey and Humber [5] read before the Pacific Association of Railway Surgeons an extensive paper regarding their method. They announce that they have had under their control from January 6 to August some 2,600 patients, and that more than double that number were turned away because not supplied with suitable credentials from their physicians. They state again that they have never made any claim for cure of cancer but are conducting research studies on malignant growths of all types with their special extract of the suprarenal. They have secured a patent to control the manufacture of their product and to prevent its exploitation by any commercial group. Therefore, they now provide a description of the technic by which the extract is prepared. Clinics have been established in San Francisco, Los Angeles and Long Beach. In the period of six months during which the treatment has been used, 13.5 per cent of the patients have died, about as many as would have died without the treatment. The authors are convinced that the product has a vasodilator action. They feel that the pain in cancer is due to vascular constriction and that because of the opposite effect of the extract it has the ability to subdue pain. They are convinced that this effect is not psychologic. According to their tabulated data based on questionnaires sent to 672 patients, 71.5 per cent had pain relieved, 10.3 per cent had never had any pain, 12.8 per cent were not relieved, and 5 per cent were doubtful. This seems to be the most that can be said for the treatment, and the evidence might certainly be better controlled. To continue their research, they have developed a foundation for its promotion. The discussion of the paper did not bring out any points particularly new regarding the method.

In the meantime the resolution adopted by the California Medical Association, apparently endorsing the scientific research and the promotional methods of the investigators, has disturbed a number of the members of that association. They prepared a protest for publication in *California and Western Medicine*, which that periodical has refused to publish. Hence these leading members of the organization are circulating their complaint in mimeographed form, protesting the passage of the resolution, deprecating the nature of the introduction of the method and the sensational publicity, doubting the value of the Coffey-Humber method, and condemning the action of the society in refusing to publish their disclaimer. The controversy is another proof of the danger of attempting to control scientific judgments by political or *viva voce* methods.

Another evidence of the liveliness of this issue on the Pacific Coast is the fact that the Portland, Ore., City and County Medical Society has been compelled to make a decision in response to an offer by the chamber of commerce of Portland to establish a clinic for the investigation of the Coffey-Humber method in that city. The president of the society was authorized to inform the chamber of commerce that it was the opinion of the society that experimentation in Oregon with this method, as with all other methods, should be under the immediate supervision of the University of Oregon Medical School and that a clinic established under such auspices would be given every assistance by the City and County Medical Society. The letter from Dr. Frederick A. Kiehle to the chamber of commerce concludes: "If, however, the recommendation of the council of the City and County Medical Society is not adopted and if an independent clinic is established for the exclusive administration of the Coffey-Humber serum, this council, while unable to give it direct support or encouragement, will nevertheless bespeak for it from the medical profession an attitude of open-minded and friendly interest."

4. Riecker, H. H.: Iron Metabolism in Pernicious and in Secondary Anemia, Arch. Int. Med. **46**: 458 (Sept.) 1930.
5. Coffey, W. B., and Humber, J. D.: Extract of Adrenal Cortex Substance, California & West. Med. **33**: 640 (Sept.) 1930.

The history of investigations of new methods for the treatment of cancer is marked, as every physician knows, by the wreckage of dozens of scientific reputations, by the bodies of patients who choose to live or probably to die under experimental methods rather than to take their chance for prolongation of life under the old ones, and by bitter although sincere controversy among scientific men. Such conditions establish again the importance of provision within organized medicine for careful study and judgment of new methods before they are given circulation to the medical profession or to the public. Had the proponents of the Coffey-Humber method seen fit from the first to follow established custom in the introduction of their technic and their results, had they consulted the Council on Pharmacy and Chemistry as to the proper method of introducing a new proprietary, they might have avoided all the acrimony, the criticism, and certainly all the notoriety that has been their lot.

THREE HUNDRED YEARS OF THE CINCHONAS IN MEDICINE

Few drugs that are employed by the physician of today have a history of therapeutic usefulness that reaches back through the centuries. This medical dignity can be claimed proudly by quinine and its companion alkaloids of the cinchona group. The barks of various species of *Cinchona* and *Remijia* (*Cuprea*) contain a considerable number of related substances, among which twenty or more have been isolated and described. They seem to resemble one another in their chemical and pharmacologic properties. The best known representatives are the alkaloids quinine, quinidine, cinchonine and cinchonidine. To thousands of persons quinine has become a household word rather than a scientific curiosity. Generations of physicians have depended on quinine or products that contain it for help in the management of disease.

The cinchonas are natives of western South America but are now cultivated in India and Java. The exact date of the introduction of the use of cinchona bark into medicine is somewhat uncertain. According to Cushny it seems questionable whether the virtues of the bark were known by the native Indians before the invasion of the Spanish. Its introduction into medicine dates from about 1630; hence an international celebration will be held at the Missouri Botanical Garden in St. Louis, October 31 and November 1, to commemorate the three hundredth anniversary of the discovery. Historical records in the possession of the Garden (Shaw's Garden) show that in 1630 Juan Lopez Canizares, Spanish corregidor of Loxa, was the first to demonstrate the use of the bark of the cinchona tree in treating malaria.

Quinine itself was isolated more than a century ago by Caventon and Pelletier[1] shortly before the first U. S. Pharmacopeia was published and at the time when the first steamship crossed the Atlantic. It has an old reputation as an antipyretic. Quinine is commonly described in textbooks as a protoplasmic poison; and it is alleged to produce its effects in the body because of this property, the action being strongest on undifferentiated protoplasm. The comparative safety in the use of the drug is indicated by the fact that it has never achieved any prominence in toxicology. Fatalities from quinine have been exceedingly few. Of course the excelling virtue of the alkaloid in modern medicine remains in its selective toxicity to undifferentiated protoplasm, notably to the plasmodia of malaria. There is some debate as to whether the action is direct or indirect. Quinine is part of the "standard" treatment for malaria. Osler said many years ago that the physician who at this day cannot treat malarial fever successfully with quinine should abandon the practice of medicine.

1. Caventon and Pelletier: Ann. de chim. et phys. **15**: 289, 1820.

Current Comment

HORMONE AND CANCER

The effort to influence the growth of cancer by various organ extracts is being widely made at present.[1] Logically it might be profitable to inquire why such trials are being made since every pathologist sees cancer growing freely in those organs whose hormonic activity is high. Moreover, investigators have shown that tumors may be inoculated with ease in the testicle, spleen and brain of mice and rats and may be found as metastatic extensions in the more minute glands of the body. If cancer grows freely in the spleen or the suprarenal or the ovary, why hope to inhibit such growth by an extract made often by crude chemical processes which may alter more sensitive products? The frequency of microscopic metastases in the spleen of human beings seems to have escaped general recognition, perhaps because the most convincing monograph on the subject is in the Dutch language.[2] But one observation is worth many opinions and the fact that extracts, scarcely to be dignified in all cases by the term hormone, do not cause one type of transplanted rat tumor to regress, casts grave doubts on their cancericidal capacity. As this tumor, number 10, regresses spontaneously with considerable facility in many strains of albino rats, any lethal action should be apparent. Among the extracts tried were that from the ovarian follicle, the corpus luteum, three sorts from the spleen and eight suprarenal extracts, including that used on human beings by Drs. Coffey and Humber. Not one of all these products appreciably affected the incidence of regression or the rate of growth of the tumor. The statistical complications introduced by the occurrence of spontaneous recessions have been carefully eliminated. The work of Dr. Bischoff and his colleagues should be repeated with a tumor that does not spon-

1. Bischoff, Fritz; and Maxwell, L. C.: J. Pharmacol. & Exper. Therap. **40**: 97, 1930.
2. Deelman, H. T.: Het metastatisch carcinoom van longen en milt in verband met de verspreiding van het carcinoom door het lichaam, Amsterdam, 1918.

taneously recede and, if the results are the same, should close the discussion on the possible therapeutic action of extracts from the group of organs tested.

THE PROTEIN REQUIREMENT OF THE PRESCHOOL CHILD

The fear of protein in nutrition is subsiding. It is becoming more evident, on the basis of actual experiment, that the body has large powers of adjustment—that it can manage successfully to tolerate diets rich or poor in the organic nutrients. One might expect this of a body that becomes acclimated to a high or a low tension of oxygen in the atmosphere. However, extremes of diet do not interest us in ordinary life as intensely as they do in war, famine and devastating illness. Nitrogen balance can be maintained in adults on a protein intake of about 40 Gm. a day, whereas Stefansson and the Eskimos can live almost exclusively on meat and fish. Of greater concern are the needs of the growing child, whose demands are far better defined than those of the average grown-up and whose opportunities for adequate nourishment largely depend on the selection made by his human guardians. The diet of childhood ought to be emancipated from the fads of the elders. Growth makes sober demands. Much attention has been devoted to the needs of infancy; but the preschool child is just beginning to become the object of serious concern by students of nutrition. In a recent report, Parsons [1] has concluded from his researches that a healthy child of the age group from 4 to 8 years can maintain a positive nitrogen balance on 0.5 Gm. of protein per pound, or 1.1 Gm. per kilogram. These are figures that set the limits for safety in child nutrition.

THE HEKTOEN PHENOMENON IN UNDULANT FEVER

Certain limitations in the diagnostic value of the Widal reaction are at times overlooked. It is of course generally recognized that agglutination of *Bacillus typhosus* is sometimes observed with the serums of healthy individuals who have previously received typhoid vaccine, and occasionally noted in normal individuals with no previous history of this vaccine or of typhoid. Many clinicians have assumed that in these widal-positive individuals decided fluctuations in Widal titer can be produced only by infection with *B. typhosus*. That quantitative fluctuations in specific agglutinins may be produced by other than homologous infections was demonstrated experimentally in 1917 by Hektoen.[2] Within the last few years the Hektoen phenomenon has been confirmed by numerous clinicians, the most recent confirmation being by Gilbert and Coleman [3] of the state department of health, Albany, N. Y. In their study of 150 cases of undulant fever, the Albany investigators recorded suggestive Widal reactions in 23 cases and definitely positive typhoid agglutination in 24 additional cases. Definite fluctuations in typhoid agglutination titer were observed during the course of this nontyphoid febrile infection. Fecal examinations were negative for micro-organisms of the enteric group. About a third of these Widal-positive patients had never had typhoid or typhoid vaccine. From these data Gilbert and Coleman conclude that positive typhoid agglutination reactions "may be encountered in specimens collected from patients during febrile diseases other than typhoid fever, even though the patients have never received typhoid vaccine nor to their knowledge had typhoid fever, and that a fluctuation of the agglutination titer, considered by some as definite evidence of typhoid fever, may occur in cases in which this infection is quite definitely excluded."

1. Parsons, J. P.: Nitrogen Metabolism of Children, Am. J. Dis. Child. **39**: 1221 (June) 1930.
2. Hektoen, Ludwig: Precipitin Production in Allergic Rabbits, J. Infect. Dis. **21**: 279 (Sept.) 1917.
3. Gilbert, Ruth; and Coleman, M. B.: Agglutination of Typhoid Bacilli in Serums of Patients Having Unrelated Infections, J. Infect. Dis. **46**: 311 (April) 1930.

TULAREMIA CONTRACTED FROM COYOTES

In June, 1925, Garberson of Miles City, Mont., encountered a case of serologically confirmed tularemia in a man who had been bitten by a coyote puppy (*Canis lestes*). A typical indolent ulcer developed at the site of the coyote bite, accompanied by the axillary adenopathy characteristic of this disease. Careful investigation did not reveal any other probable source of infection. Parker [1] decided to investigate the susceptibility of the coyote to tularemia. Three young coyotes were fed with the tissues of guinea-pigs and Belgian rabbits just dead of tularemia. The coyotes died on the thirteenth, twenty-second and fifty-third day, respectively, after the infectious material was first fed. Emulsions of tissue of the dead coyotes were injected into guinea-pigs. The guinea-pigs died and necropsy revealed the typical spotted spleens and livers and enlarged caseous lymph nodes; *Bacterium tularense* was recovered in pure culture from the guinea-pig tissues. Injections of tissue suspensions of salivary gland tissue from two of the coyotes into guinea-pigs caused their death from tularemia; this discovery introduced the possibility of a new avenue for the transfer of the infection to man by the bite of a wild rodent or carnivore. More recently, Kunkel [2] has reported a case of typical ulceroglandular tularemia in a man who had killed and skinned an adult coyote. Just prior to the disposition of the carcass the patient cut his left index finger with an ax. The primary lesion developed at the site of the cut. There were no other animal contacts before the development of the illness. A blood specimen collected nineteen days after the onset of illness was submitted to the Hygienic Laboratory of the United States Public Health Service at Washington, where the serum was found to agglutinate *Bacterium tularense* in all dilutions to 1:1,280, thus confirming the clinical diagnosis of tularemia. While the wild rabbit constitutes the important reservoir of infection for other animals and man, recent reports of new animal hosts and transmitters (woodchuck, opossum, muskrat, European water rat, sheep

1. Parker, R. R., and Francis, E.: The Susceptibility of the Coyote (Canis Lestes) to Tularemia, Pub Health Rep. **41**: 1407 (July 9) 1926.
2. Kunkel, G. M.: Report of Case of Tularemia Contracted from a Coyote (Canis Lestes) in New Mexico, Pub. Health Rep. **45**: 439 (Feb. 28) 1930.

and quail) and new insect vectors (wood tick of California, *Dermacentor occidentalis* Newmann) indicate the ever-widening spread of the infection to other forms of animal and insect life. This situation is almost certain to result in the perpetuation of the disease among lower animal forms and thus increase the possibilities for the development of the infection in human beings.

Association News

THE PHILADELPHIA SESSION

Dates for Annual Session

The Eighty-Second Annual Session of the American Medical Association will be held in Philadelphia, June 8 to 12, 1931. It was first thought that the session could be held in May but, because of conditions affecting the buildings to be used for exhibits and section meeting places, it was necessary to select June 8 to 12.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday, 10:15 on Tuesday, and 10 a. m. on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

November 3. Protecting the Surface.
November 4. Health on Display.
November 8. Constipation and Colitis.

Five Minute Health Talks may be heard over the Columbia Broadcasting System daily except Sundays and holidays, from 12 to 12:05 p. m.

The program for the week is as follows:

November 3. A Hard Taskmaster.
November 4. Too Much Pity.
November 5. The Art of Accepting Affliction.
November 6. Hope for the Handicapped.
November 7. Shattering the Shingles Superstition.
November 8. Tempests That Trail the Troublesome Tonsil.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Gridiron Banquet.—Three hundred members of Jefferson County Medical Society held a gridiron banquet, October 6, which featured comic solutions of medical problems, a mirth provoking meeting of a board of censors, imitating Birmingham physicians, and a consultation of seven surgeons on a Sunday morning tour of hospitals. Dr. James R. Garber, Birmingham, presided and outlined the use of medical terms as insurance against any serious business entering the meeting.

ARKANSAS

Society News.—Dr. Richard S. Weiss, St. Louis, addressed the Tenth Councilor District Medical Society at Fort Smith, September 16, on "Drug Eruptions."——The Mississippi County Medical Society was addressed, September 9, by Drs. Lucius Carl Sanders and Thomas D. Moore, both of Memphis, on cancer of the colon and nephritis, respectively.

CALIFORNIA

Society News.—The Pasteur Society of Central California was addressed, September 24, by Dr. Alfred C. Reed, San Francisco, on animal parasites of man, and Karl F. Meyer, Ph.D., San Francisco, on trichinosis.——The Contra Costa Medical Society was addressed, September 11, at Richmond by Dr. John W. Bumgarner, Richmond, on industrial problems in medical practice, and Dr. Leopold H. Fraser, Richmond, "Fractures Involving Joints."——"Early Respiratory Complications Following Operation" was the subject of Dr. Harold Brunn, San Francisco, before the Fresno County Medical Society, September 9.——Among others, Drs. Thomas C. O'Connor and Robert A. Peers, Colfax, addressed the San Joaquin County Medical Society, September 4, on "Importance of History Taking" and "What to Tell the Tuberculous Patient," respectively.——The Santa Barbara County Medical Society was addressed, September 8, by Dr. Rutherford B. H. Gradwohl, St. Louis, on "Schilling Blood Methods," and Howard S. Duff, D.D.S., Santa Barbara, "Pyorrhea in Its Relation to Systemic Diseases."

Another Metabolic Clinic.—The new Grace Deere Velie Metabolic Clinic at Carmel was opened to the public, August 10, for the investigation of metabolism and the study and treatment of patients suffering from metabolic diseases. While it will not be conducted for profit, any income from the care of patients is expected to defray part of the operating expenses. The clinic was made possible by a bequest of $750,000, of which $250,000 has been expended on the building and equipment.

The capacity is twenty-five beds in private rooms. There is a routine clinical laboratory and research laboratories. The initial staff consists of Dr. Rudolph A. Kocher, Paul B. Hartley, Elmer Messner, Ph.D., and Drs. Frederick H. Rodenbaugh and Irving S. Ingber, roentgenologists.

DISTRICT OF COLUMBIA

High Tuberculosis Death Rate.—The city of Washington still has a death rate of 92 persons per hundred thousand of population from tuberculosis. The general average death rate from the disease throughout the country is 70 persons per hundred thousand of population. It is reported that Washington's relatively high death rate is due in part to the higher tuberculosis death rate of its colored population. In 1923 there were 226 deaths per hundred thousand among the colored as compared with 51 per hundred thousand for the white population.

ILLINOIS

Cleveland Program at Quincy.—The fifth annual all-day clinical meeting of the Adams County Medical Society will be held at Quincy, November 17. Dr. George W. Crile, Cleveland, will speak on "Clinical Analysis of 21,135 Operations on the Thyroid Gland with Special Relation to End-Results"; "The Nature and Treatment of Peptic Ulcer," and "Management of Patients Seriously Sick"; Dr. Russell L. Haden, Cleveland Heights, Ohio, "Types and Treatment of Rheumatism"; "Differentiation and Treatment of the Anemias" and "Dental Infection and Systemic Diseases," and Dr. William V. Mullin, Cleveland, "Management of Chronic Diseases of Nasal Sinuses in Relation to Their Effects on Systemic Disease," "Bronchial Asthma" and "The Salivary Glands." Physicians are urged to attend; there is no registration fee.

INDIANA

Society News.—Dr. Robert M. Moore, Indianapolis, addressed the Elkhart County Medical Society, October 2, on "Coronary Occlusion—Some Clinical Observations."——The Third District Medical Society was addressed at New Albany, October 8, by Drs. Emmet F. Horine, Louisville, Ky., on "The Mechanism of the Heart"; Joseph R. Dillinger, French Lick, on "Tonsillitis and Some of Its Sequelae," and Parvin M. Davis, New Albany, on "Intra-Abdominal Abscesses."——The Seventh District Medical Society, Martinsville, was addressed at Indianapolis, October 28, by Drs. Harry E. Mock, Chicago, on "Skull Fractures" and "Joint Fractures," and

Martin H. Fischer, Cincinnati, "Principles of Feeding in Gastric Disease" and "Edema and Albuminuria"; Dr. E. Starr Judd, Rochester, Minn., addressed the evening session on "Clinical Manifestations and Treatment of Peptic Ulcer." —— The Indianapolis Medical Society was addressed, October 21, by Drs. Murray N. Hadley and Lyman Pearson, both of Indianapolis, on "Cause of Death in Operative Treatment of Gallbladder Disease" and "Cirrhosis of the Liver," respectively.

Scientific and Medical Displays at State Meeting.—Among the scientific and medical displays at the recent annual meeting of the Indiana State Medical Association at Fort Wayne was a study of the state-wide distribution of physicians prepared by the Indiana University Medical Center. Maps of the state were made showing graphically the variations in ratio of total population to the total number of physicians, the average age of physicians, where the young doctors have settled in the last ten years, and where medical students are coming from. Other maps concerned hospitals, gain or loss in population, road conditions and telephone facilities. The survey was conducted to ascertain the medical needs of the state and to aid young physicians in choosing locations. The work was done under the direction of Dr. Thurman B. Rice. Other displays showed experimental methods and types of apparatus used in pharmacology, necropsy specimens illustrating common disease conditions; motion pictures showing types of orthopedic conditions seen at Riley Hospital; lantern slides and surgical specimens regarding research problems conducted under the Eli Lilly Research Fellowship, and motion pictures of cases of meningitis.

KENTUCKY

Reporters to Cooperate with Medical Journals.—At the recent session of the Kentucky State Medical Association at Bowling Green, the council decided to request the county secretaries to act as reporters for news items for the *Kentucky State Medical Journal* and also of THE JOURNAL.

Society News.—The Christian County Medical Society was addressed, September 23, by Drs. Nathaniel S. Shofner and Jack Witherspoon, both of Nashville, on "Diseases of the Thyroid" and "Duodenal Ulcers," respectively.——The Daviess County Medical Society was addressed, September 23, among others, by Drs. William L. Tyler and Joseph R. McGary, Owensboro, on "The Cardiorenal Vascular Syndrome" and "Essential Hypertension," respectively. —— Dr. Arthur G. Quinn, Memphis, Tenn., among others, addressed the Four County Medical Society at Fulton, September 30, on "Diseases of the Thymus Gland in Infants."

MARYLAND

Personal.—Dr. William H. Welch, professor of the history of medicine, Johns Hopkins University School of Medicine, Baltimore, received the honorary degree of doctor of laws at the sixty-sixth convention of the University of the State of New York, October 16.

Society News.—The Baltimore City Medical Society was addressed, October 17, by Drs. Gordon M. Holmes, London, England, visiting neurologist at Johns Hopkins Medical School; Max Kahn, Baltimore, "Pre- and Postoperative X-Ray Treatment of Cancer of the Breast"; John A. Askin, Baltimore, "Case of Congenital Anorectal Stricture," and Leo Brady, Baltimore, "Extraperitoneal Pelvic Conditions in Women."

Dr. Weinberg Gives DeLamar Lectures.—The first of the 1930-1931 DeLamar lectures in hygiene, arranged annually by the Johns Hopkins University School of Hygenie and Public Health, were given, October 21-22, by Dr. M. Weinberg of the Pasteur Institute, Paris, on "Rôle of Anaerobic Bacteria in Human Pathology" and "Serotherapy of Medical and Surgical Infections Caused by Anaerobic Bacteria." These lectures are supported from the fund bequeathed to the medical school by Joseph R. DeLamar, in accordance with his will "to give to the people of the United States generally the benefits of increased knowledge concerning the prevention of sickness and disease and also concerning the conservation of health by proper food and diet."

MASSACHUSETTS

Annual Meeting of New England Surgical Society.—The thirteenth annual meeting of the New England Surgical Society was held at Boston, September 29-30. Among others, papers were delivered by Drs. George A. Leland, Jr., on "Some Aspects of the Treatment of Cancer of the Cervix"; George G. Smith, "Palliative Operations for Advanced Cancer of the Bladder"; Robert B. Greenough and Joseph C. Aub, "The Lead Treatment of Cancer," and Henry Jackson, Jr., "Biological Aspects of Cancer." Several clinics were held at the Boston City, Massachusetts General and Peter Bent Brigham hospitals.

Dinner to Dr. Benedict. — Francis G. Benedict, Ph.D., director, since 1907, of the Nutrition Laboratory of the Carnegie Institution of Washington, Boston, was guest of honor at a complimentary dinner given, October 3, by his associates on the occasion of his sixtieth birthday. George H. Parker, S.D., professor of zoology, Harvard University, presided at the dinner. Among the speakers were Drs. Eugene F. Du Bois, medical director, Russell Sage Institute of Pathology; Elliot P. Joslin, clinical professor of medicine, Harvard Medical School, and George W. Crile, Cleveland; Allan Winter Rowe, Ph.D., director of research at the Evans Memorial, presented Dr. Benedict with a handsome volume containing congratulatory letters from scientists all over the world.

MICHIGAN

Dr. Burr Honored.—The honorary degree of master of arts was conferred on Colonel B. Burr, Flint, at the eighty-second opening assembly of the University of Michigan Medical School, Ann Arbor, by Alexander G. Ruthven, president of the university. Dr. Burr, a retired physician and psychiatrist, former superintendent of the Eastern Michigan Asylum, Pontiac, is the author of the recent two volume "Medical History of Michigan." Dr. Burr was formerly a member of the faculty and historian of the university.

Society News.—The Wayne County Medical Society was addressed, October 7, by Dr. Clarence D. Selby, Toledo, Ohio, on "The Diagnosis of Injuries." —— The Detroit Pediatric Society was addressed, October 1, by Drs. William S. O'Donnell on "Treatment of Edema in Tuberculous Nephritis."—— The Calhoun County Medical Society was addressed, October 7, by Mason Sinai, D.P.H., Ann Arbor, on "Trends in Medical Economics."——The Grand Traverse-Leelanau County Medical Society was addressed, August 12, by Dr. Cyrus C. Sturgis, Ann Arbor, on "Treatment of Pernicious Anemia." —— Dr. Alfred L. Arnold, Jr., Owosso, exhibited a film entitled "Treatment of Normal Breech Presentation" before the Shiawassee County Medical Society at its September meeting.—— The fifth annual clinic of the Highland Park Physicians' Club will be held, December 4, at the Highland Park General Hospital; among the participants will be Drs. Dean D. Lewis, Baltimore; Ernest E. Irons, Chicago; Charles S. White, Washington, D. C., and Alexander Primrose, Toronto, Ontario. ——The first of the series of graduate courses in medicine and surgery to be conducted by the Wayne County Medical Society was given by Drs. Elisha S. Gurdjian, September 26, on "Head Injuries" (surgery); Frank S. Perkins, September 30, "Dietotherapy" (medicine); Arthur E. Schiller, October 3, "Tumors and Ulcers of Face" (surgery); Richard M. McKean, October 7, "Hypertension and Nephritis" (medicine); William E. Johnston, October 10, "Thyroid" (surgery); beginning October 14, the course was given by Dr. Don W. McLean on "Diabetes" (medicine); October 17, Claire L. Straith, "Plastic Surgery" (surgery); October 21, Daniel P. Foster, "Obesity and Other Nutritional Problems" (medicine).——Dr. Joseph T. Wearn, Cleveland, addressed the medical section of the Wayne County Medical Society, October 14, on "How the Heart Grows Old." —— The medical reserve corps group courses begun, October 6, will be continued the first and third Mondays of each month until spring. The schedule includes the subjects of medical department administration, elementary military sanitation, service with medical detachments, medical tactics and medical service of the field force. These will be offered as basic and advancement courses. Further information may be obtained from Major Harrison W. Stuckey, medical executive, 438 Book Tower.

MINNESOTA

Unlicensed Practitioner Sentenced. — J. E. Dufort, Northome, was recently given a suspended sentence of one year in the county jail and required to pay a fine of $100 for practicing medicine without a license. Dufort has been located at Northome for twenty years and has never possessed a license to practice medicine anywhere. He was arrested in 1928 charged with violating the basic science law, and was arrested again in June, 1930 (THE JOURNAL, Jan. 19, 1929, p. 237).

Society News.—The Minnesota Academy of Medicine was addressed, October 8, by Dr. John Charnley McKinley, Minneapolis, on "Familial Diffuse Sclerosis of the Brain," and by Drs. Frederic E. B. Foley and Arnold Schwyzer, St. Paul, on "An Improved Pelvio-Ureteroplastic Operation for Hydronephrosis."——Dr. Solon Marx White, Minneapolis, addressed the Interurban Academy of Medicine at Duluth recently on "Arthritis Deformans."——"Serum Reactions" was the subject of Dr. Reuben A. Johnson, Minneapolis, before the Scott-Carver County Medical Society recently. —— Dr. George E.

Fahr, Minneapolis, began a series of talks on cardiology before the Park Region District and County Medical Society, October 8, at Alexandria, on "Management of the Ambulant Cardiac Patient."——"Sciatica" was the subject of a paper read by Dr. Andrew P. MacKinnon, Winnipeg, Manit., among others, before the Red River Valley Medical Society at Warren, October 9.——Dr. Arthur I. Arneson, Starbuck, addressed the West Central Minnesota Medical Society at Morris, October 8, on blood chemistry, and Dr. Charles L. Scofield, Benson, on the relation of physicians to the state board of health.

NEBRASKA

Society News.—Dr. John S. Musser, New Orleans, addressed the Omaha-Douglas County Medical Society, October 20, on "Oral Cavity in Certain Systemic Diseases"; the society was addressed, October 28, by Drs. Maurice C. Hennessy, Council Bluffs, on "County Health Situation in Council Bluffs"; Alfred J. Brown, Omaha, "Influence of Cervical Paravertebral Anesthesia on the Pulse Rate During Operations on the Toxic Thyroid Gland," and James T. Maxwell, "Ethyl Chloride as a General Anesthetic."——Dr. John L. Morse, Boston, addressed the student body and faculty at the University of Nebraska Medical College, October 9, on "Chronic Indigestion in Children."

NEW YORK

Trichinosis Made Reportable.—The public health council, September 17, amended the sanitary code making trichinosis one on the list of communicable diseases to take effect October 1. Official attention was called to the fact that undulant fever and tularemia are also reportable.

Personal.—Dr. Lloyd H. Ziegler recently accepted the professorship of neurology and psychiatry at the Albany Medical College, having resigned from the staff of the Mayo Clinic; Dr. Ziegler will also be neuropsychiatrist-in-chief of the Albany Hospital.——Dr. William P. Brown, medical director of the Pennsylvania Tuberculosis Society, has been appointed superintendent of the Pawling Sanatorium, Wynantskill, the tuberculosis hospital for Rensselaer County.

Septic Sore Throat in Kingston.—An outbreak of septic sore throat in Kingston which began the last week in August resulted in 151 known cases and 6 deaths. It was estimated that the epidemic involved 700 cases. Investigations of eighteen dairy farms, begun September 5, revealed that the bulk of the cases were on the route of two dealers who purchased raw milk from one dairy in which two milkers were found to have had sore throat and the owner to have previously had sore throat from which cultures showed the presence of hemolytic streptococci. Up to September 22, 98 families, comprising 340 individuals, were visited on one route, and 117 cases were discovered. On the second route, 99 families, comprising 297 individuals, were visited, and 34 cases were discovered. Examinations of milk from an injured cow in the herd of the implicated dairy revealed the presence of hemolytic streptococci which were from a morphologic and cultural point of view identical with the organisms secured from the patients' throat. The epidemic began to subside immediately after the infected cow was excluded from the herd.

Society News.—The fourth annual conference of secretaries of county medical societies, held at Albany, September 9, with representatives of twenty-one counties present, considered the policy of cooperation between physicians and state health officers on the matters of public health.——The Medical Society of the County of Nassau was addressed, September 30, at Hempstead by Dr. Richard Kovacs, New York, on diathermy.——The Bronx County Medical Society was addressed, October 15, by Drs. Joseph H. Gettinger, New York, and George F. Chandler, Kingston, on "Mass Production and Wholesale Distribution in Medicine" and "Thoughts on Medical Economics."——The twenty-fourth annual meeting of the Seventh District Branch Medical Society of the state of New York was held at Penn Yan, September 24. Among others, talks were made by Drs. John L. Eckel, Buffalo, on "Anterior Poliomyelitis"; William Wayne Babcock, "Resuscitation," and James E. Talley, Philadelphia, "Care of the Heart in Certain Infections."——The Medical Society of the County of Kings was addressed, October 21, by Drs. William H. Ross, Brentwood, president of the Medical Society of the State of New York, on present day trends in medical public relationships; James E. Sadlier, Poughkeepsie, "Need of Medical Leadership in Public Health Relations," and John A. Card, Poughkeepsie, "Malpractice Insurance."——The Brooklyn Society of Internal Medicine was addressed, October 24, by Dr. Richard Kovacs on "Present Day Use of Hydrotherapy, Including American Spa Methods"; Dr. Walter P. Anderton delivered a medical travelogue on "Some French and English Spas."——A symposium on cardiology was conducted by the East New York Medical Society, October 27.——Dr. Fred Maurice McPhedran, Philadelphia, addressed a joint meeting of the Queensboro Tuberculosis and Health Association and the Medical Society of the County of Queens, September 23, at Bayside on "Some Aspects of the Prevention of Tuberculosis in Children."——Dr. Walter L. Niles, New York, addressed the Suffolk County Medical Society, October 30, at Riverhead on "Digitalis Therapy in Pneumonia."——Dr. Walter J. Highman, New York, addressed the Medical Society of the County of Albany, October 24, on "The Nature of Eczema."

New York City

Appointments at Cornell.—Dr. Herbert F. Traut, assistant in obstetrics, Johns Hopkins Medical School, Baltimore, has been appointed associate obstetrician of the New York Hospital and associate professor of obstetrics and gynecology in the Cornell University Medical College. Dr. Robert Gordon Douglas, instructor in obstetrics, Johns Hopkins Medical School, has been appointed assistant obstetrician of the New York Hospital and associate in obstetrics and gynecology in the medical college. These appointees are to assume active duty in the new plant, which is now under construction, under Dr. Henricus J. Stander who has been appointed obstetrician-in-chief of the New York Hospital and professor of obstetrics and gynecology in the medical college. Dr. Stander was formerly associate professor of obstetrics at Johns Hopkins.

Society Endorses Compensation Agreement.—The Comitia Minora of the Medical Society of the County of New York, October 13, endorsed an agreement with the compensation insurance carriers of the state. The society aims to get the carriers to recognize treatment of compensation claimants by qualified physicians without formal authorization from employers. The carriers aim to give the employee proper administration of the workmen's compensation law involving skilful medical and surgical care; prompt and proper completion of forms for prompt compensation pay, and that physicians' bills be reasonable and promptly forwarded to companies and not to the compensation commission and promptly paid. The carriers agreed to correct the erroneous opinion that they indiscriminately lift cases of injured employees from the care of competent family physicians of those employees. They agreed that reasonable charges for services of family physicians will be promptly paid. In the furtherance of these aims, the county society agreed to instruct members of the importance of proper treatment to bring the injured employee back to efficiency as soon as possible. The carrier is to be consulted when there is doubt of proper handling of any case. The society will arrange fee schedules with the carriers to which physicians must conform. All disputes will be decided on by an arbitration board representative of the physicians and carriers. The society members agreed to seek advice and abide by the decision of the carriers concerning consultations, roentgen examinations and other treatments beyond the ordinary, and will give at reasonable times carrier examinations of claimants except where the physician must act quickly in dire emergency. The society will schedule meetings to be addressed by specialists in industrial medicine and surgery and by qualified interpreters of the workmen's compensation law. The carriers agreed to furnish literature and other aid in instructing members of county medical societies concerning industrial medical and surgical fields and in regard to the detail of paper work necessary in the efficient administration of the compensation law.

OHIO

Hospital News.—The total expense of operating nineteen hospitals in Cleveland participating in the Community Fund for 1929 was $5,500,432, it is reported, of which $951,212 was paid from the Community Fund. The total of 69,820 patients were given 793,846 days of care.

Personal.—Dr. Carl H. Lenhart was recently added to the faculty of the School of Medicine of Western Reserve University, Cleveland, as professor of clinical surgery and as chief of the division of surgery of the City Hospital. Dr. Lenhart will retain his office as director of the surgical division of St. Luke's Hospital but will give half his time to the new position at City Hospital.

Conference on Adolescence.—The first conference on research on adolescence sponsored by Western Reserve University and the Brush Foundation was held, October 17-18, at Cleveland. A specially selected group was chosen to attend. The conference dealt with changes which take place in the child during the second decade including the relations between

the development of the body and mind during adolescence, the effects of nutrition, and the endocrine glands on development, studies on adolescent behavior and the organization and development of personality. Among the speakers were Dr. Wingate Todd, on "Adolescence as a Practical Study"; Dr. Norman W. Ingalls, "Sex Features in Adolescence"; Elmer V. McCollum, Sc.D., Baltimore, "Nutritional Considerations in the Second Decade"; George E. Coghill, Ph.D., Philadelphia, "Anatomical Growth of the Nervous System in Relation to Behavior," and Frederic L. Wells, Ph.D., Boston, "The Ethics, Objectives and Practical Value of Psychometry."

TENNESSEE

Hospital News.—Nineteen Memphis physicians who specialized in diseases of the eye, ear, nose and throat recently organized a holding company known as the Meenath Corporation for the purpose of insuring the operation of the Memphis Eye, Ear, Nose and Throat Hospital. The name of the corporation is made up by combining the initials from the various words making up the name of the hospital. The incorporators have agreed to support the hospital with part of their work in order to carry on the good work of the institution. Free clinics will be continued for sufferers from the diseases of the eye, ear, nose and throat as in the past, and a special hay-fever clinic will be conducted on certain days. Any indigent patient of Memphis or vicinity may receive service at these clinics extended by the staff.

Appointments at Vanderbilt.—The following additions to the staff of Vanderbilt University School of Medicine, Nashville, were recently announced, it is reported:

Dr. Samuel M. Bloomstein, associate professor of clinical pediatrics.
Dr. Robert Boyd Bogle, associate professor of clinical dental surgery.
Walter N. Morgan, D.D.S., associate professor of clinical dental surgery.
Oren A. Oliver, D.D.S., associate professor of clinical dental surgery.
Dr. Richard Ashman, Ph.D., assistant professor of physiology.
Dr. Sam L. Clark, assistant professor of anatomy.
Dr. Harry T. Hillstrom, assistant professor of surgery in charge of radiology.

All classes of the school of medicine have their full quota enrolment, classes being limited to 50 for each class. There were 645 applications for admission to the school for the fall term, it is reported, with 601 of these for the freshman class, and 41 for advanced standing from other accredited medical schools, the total representing a 33 per cent increase over the number of applicants for admission last school year.

TEXAS

Personal.—Dr. John W. Burns, Cuero, was recently appointed a member of the state board of health to fill the vacancy created by the resignation of Dr. Joseph Gilbert, Austin; Dr. Gilbert resigned to become physician at the University of Texas, a position which he formerly held, it is reported.——Dr. George H. Spivey resigned, September 1, as director of the Winkler County Health Unit, Wink, to accept a similar position, it is reported, at Phoenix, Ariz.

University Faculty Changes.—The following changes, among others, in the faculty of the University of Texas School of Medicine, Galveston, have recently been announced:

Dr. Felix L. Butte, who has been on leave of absence in the Cleveland City Hospital for the last year, will return as associate professor of anatomy.
Dr. John V. Sessums, associate professor of anatomy.
Marion Fay, Ph.D., associate professor of biologic chemistry.
Dr. Harry L. Klotz, adjunct professor in department of pathology.
Dr. Charles H. Taft, New Haven, Conn., associate professor in department of pharmacology.
Dr. Robert Milo Moore, St. Louis, associate professor of experimental surgery.

In the department of biologic chemistry, Meyer Bodansky, Ph.D., will become the head of the laboratories of John Sealy Hospital but will retain a teaching connection with the school of medicine as professor of the newly created department of pathologic chemistry. Elective courses for juniors and seniors will be offered as soon as the course is organized.

Society News.—The Dallas County Medical Society conducted a symposium on goiter, September 11, the speakers being Drs. Paul H. Duff, Robert M. Barton and Walter E. Sistrunk, Jr., all of Dallas.——"Spinal Anesthesia" was the subject of Dr. Herschel F. Connally, Waco, before the Falls County Medical Society, September 8; Dr. Joel I. Collier, Marlin, presented a case of sinus infection.——The Harris County Medical Society was addressed, September 10, by Drs. George M. Brandau, Houston, on "Incidence of the Sickle Cell Trait in Industrial Workers," and Archie L. Mitchell and Byron P. York, Houston, "A Simple Method of Transfusing Infants and Children."——"Whole Blood Transfusion" was the subject of Dr. Julius T. Krueger, Lubbock, before the Lubbock-Crosby Counties Medical Society, September 9.——Dr. Conrad Frey, Melvin, spoke on "Myelogenous Leukemia" before the McCulloch County Medical Society; a second feature of the program was a round table discussion of medical problems, both scientific and economic.——The Potter County Medical Society was addressed, September 8, by Dr. Elisha A. Metzger, Amarillo, on "Injection Treatment of Varicose Veins of the Leg."——The Tom Green County Medical Society was addressed, September 1, at San Angelo, by Drs. Charles L. Martin, Dallas, on "Cancer of the Mouth and Neck"; Hugh Leslie Moore, Dallas, "Secondary Diarrhea in Infants," and D. D. Wall, San Angelo, "Rectal Anesthesia in Obstetrics."——Among others, Drs. Orman T. Kimbrough, Wichita Falls, and Ernest H. Bursey, Fort Worth, addressed the Thirteenth District Medical Society, September 9, at Wichita Falls, on "Conditions of Upper Urinary Tract Due to Adnexal Disease" and "Thrombopenic Purpura Hemorrhagica," respectively.

VIRGINIA

Society News.—The Southwestern Virginia Medical Society was addressed, September 23-24, among others, by Drs. James C. Motley, Abingdon, on "Relation Between General Medicine and Mental Hygiene," and John E. Gardner, Roanoke, "Acute Bichloride of Mercury Poisoning," with a case report.

Personal.—Dr. Fred J. Wampler, professor of preventive medicine at the Medical College of Virginia, Richmond, has been granted a leave of absence to serve as a member of a commission sponsored by the Institute of Social and Religious Research of New York City to make a study of missions in India.

University News.—Fundamental health services performed by the Medical College of Virginia through its hospitals and clinics increased from a total of 55,866 in 1928-1929 to 67,888 in 1929-1930. In addition to the health services rendered, the colleges last year gave instruction to 879 students in its four schools of medicine, dentistry, pharmacy and nursing.——Free dental work of white pupils of Richmond in public schools will be done during the session 1930-1931 at the Medical College of Virginia, for which it has appropriated $5,000. A graduate operator and supervisor is in charge of this clinic and three undergraduate students will do the work under his instruction.——An engraving of William Harvey was recently presented to the Medical College of Virginia by Dr. Joseph L. Miller, Thomas, W. Va.; it bears the date 1739 and was made by I. and P. Knapton, London. Dr. Miller recently presented to the Richmond Academy of Medicine a library dealing with the history of the medical profession. The library will be placed in the building soon to be erected and will be used jointly by the college and the academy for library purposes.

GENERAL

Increase of Meningitis.—According to the U. S. Public Health Service there has been a progressive increase in the number of cases of meningococcus during the past five years; 1,859 cases were reported for 1925 and 9,660 for 1929. Since March, 1930, the reported prevalence of the disease has been lower than it was in the corresponding months of 1925. In comparison with the prevalence of the disease over the world, an increase in the United States was noted between 1915-1917 but the number of cases did not rise noticeably in Europe until 1929. An outbreak of meningococcus meningitis early this year was noted in the Anglo-Egyptian Sudan, and also the French Protectorate of Morocco with a slight increase of incidence in Mexico.

Another Journal on Pathology.—Beginning January, 1931, the American Society of Clinical Pathologists will publish a bimonthly journal known as the *American Journal of Clinical Pathology*. This journal will publish original papers dealing with all phases of clinical pathology and closely related subjects. The editors will also make an effort to publish articles dealing with new methods and comparisons of old methods in the application of clinical pathology to medicine and surgery. Manuscripts should be sent to Dr. Thomas B. Magath, editor, Mayo Clinic, Rochester, Minn. The advisory editorial board consists of Drs. John A. Kolmer, Philadelphia; Arthur H. Sanford, Rochester, Minn.; Bowman C. Crowell, Chicago; Robert A. Keilty, Washington, D. C.; Frank W. Hartman, Detroit; Herbert Fox, Philadelphia; Kenneth M. Lynch, Charleston, S. C.; Stanley P. Reimann, Philadelphia; Walter S. Thomas, Clifton Springs, N. Y.; Robert A. Kilduffe, Atlantic City; Harry J. Corper, Denver, and C. S. Butler.

National Certification Board on Obstetrics and Gynecology.—The American Board of Obstetrics and Gynecology, composed of nine members and examiners, elected by the American Association of Obstetricians, Gynecologists and

Abdominal Surgeons, the American Gynecological Society, and the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, was formally organized in Niagara Falls, September 16. The board will grant certificates indicating proficiency and specialization in obstetrics or gynecology, or both, to those who comply with its requirements. The board is now prepared to receive applications from experienced and qualified obstetricians and gynecologists. This board has been in process of organization since 1927. It is hoped and expected that its certificate will have considerable weight in the minds of hospital trustees and other laymen as well as in many important medical circles whenever a question arises as to an individual's special ability in obstetrics and gynecology. Detailed information and application blanks may be secured from Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh, Pa.

The National Institute of Health.—Plans for expansion of the new National Institute of Health, established by Congress in May, are under consideration by the U. S. Public Health Service. The institute has three divisions at present —pharmacology, chemistry, and pathology and bacteriology. According to a statement by Dr. Ralph C. Williams, assistant surgeon general, in a recent issue of the *United States Daily*, the addition of two new divisions, physiology and physics, are contemplated. It has been proposed that work in industrial hygiene will be developed probably under the division of chemistry to include the study of problems involved in the study of industrial problems, proper heating, light and ventilation, and industrial poisons in relation to health. It is also planned to erect a three story addition to each of the two present buildings and to construct two new buildings in order to provide more space for research workers and permit expansion of activities into new fields. The institute hopes later to have a farm near Washington where animals used in health research may be raised. It is intended to submit the full plan of extension to Congress, which, at its next session, will be requested to make available the $750,000 construction fund authorized under the law creating the institute.

Society News.—The Polish Medical and Dental Association of America at its annual meeting in Chicago, October 2-4, elected Dr. Kasimier G. Cieslak, Cleveland, president, and P. J. Wawrzynski, D.D.S., Lakewood, Ohio, secretary. Dr. Irving S. Cutter, dean, Northwestern University Medical School, Chicago, gave an address on "Poland's Contribution to American Hygiene and Sanitation."——At the forty-first annual meeting in Denver, October 14-16, of the Association of American Medical Colleges, the following officers were elected: President, Dr. Maurice H. Rees, Denver; vice president, Dr. Charles C. Bass, New Orleans, and secretary-treasurer, Dr. Fred C. Zapffe, 25 East Washington Street, Chicago (reelected). The next annual meeting will be held in New Orleans in 1931.——The Children's Hospital Association of America held its annual meeting at New Orleans, October 23; among the speakers were Drs. Charles C. Hedges, New York, and Laurence R. De Buys, New Orleans, whose subjects were "The Organization and Operation of a Pediatric Outpatient Department" and "Management of a Children's Service in a General Hospital," respectively.——The Central States Pediatric Society will hold its annual meeting, November 7-8, in Memphis; the society is composed of men doing pediatrics in the territory extending from Pittsburgh to Denver, inclusive, and all physicians in this region are cordially invited to attend. Among the speakers will be Drs. Maud Loeber, New Orleans, "Evaluation of Gastric Analyses and Stool Examination in a Series of Cases When No Other Pathology Has Been Found to Account for Anorexia, Loss of Weight and Capricious Appetite"; Edwin G. Schwarz, Fort Worth, Texas, "Is the Allergic Individual More Susceptible to Poliomyelitis?" Madison Hines Roberts, Atlanta, Ga., "A Study of Approximately Five Hundred New-Born Infants, Born of Syphilitic Mothers," and John A. McIntosh, Memphis, "The Relationship of Metazoal and Protozoal Infestation to Vitamin B Deficiency."——The National Society for the Prevention of Blindness has been conducting a series of lectures given to classes for training sight-saving class teachers at the Universities of Cincinnati and Chicago, Columbia University and the State Teachers' College at Buffalo with Dr. Benjamin Franklin Royer, medical director, in charge.

Southern Medical Association Meeting.—At the twenty-fourth annual meeting of the Southern Medical Association, Louisville, Ky., November 11-14, papers will be presented by Drs. Lucius E. Burch, Nashville, Tenn., on "Ephraim McDowell and Ovarian Surgery"; Surg. Gen. Hugh S. Cumming, U. S. Public Health Service, Washington, D. C., "Future Relations of the Profession to the Public"; E. Starr Judd, President-Elect, American Medical Association, Rochester, Minn., "Some of the Historical Points Connected with the Development of Surgery of the Biliary Tract"; Thomas Parran, Jr., state health commissioner of New York, Albany; Walter L. Treadway, Washington, D. C., "Relationship of Neuropsychiatry to the Field of Public Health"; Surg. Gen. Merritte W. Ireland, "Relation of Internal Medicine and Surgery"; Hugh Leslie Moore, Dallas, Texas, "A Clinical Observation in Nutritional Injuries"; George W. F. Rembert, Jr., Jackson, Miss., "Gastro-Enterology: An Important Phase in Diagnostic Procedure"; Ernest W. Goodpasture, Nashville, Tenn., "Cytotropism and Virus Infection of the Nervous System," illustrated; Robert Finley Gayle, Jr., Richmond, Va., "The Relationship between Neurology and General Medicine and Surgery"; John W. Pierson, Baltimore, "Some Bone Changes Associated with Diseases of the Hematopoietic System"; Jeffrey C. Michael, Houston, Texas, "Advisability of a Revision of Dermatologic Nomenclature"; John W. Turner, Atlanta, "Chronic Salpingitis"; the section on obstetrics will conduct a symposium on maternal welfare and the section on urology one on treatment of gonorrhea. During the same week other associations will meet as follows: Conference of City and County Health Officers of Kentucky; the sixteenth annual meeting of the Women Physicians of the Southern Medical Association; the third annual conference of medical work in connection with the Veterans' Pension Claims by the Medical Referee of the Bureau of Pensions and the Pension Examining Surgeons; the Southern States Association of Railway Surgeons; the National Malaria Committee and the Southern Association of Anesthesists and the Mid-Western Association of Anesthetists. Entertainment will include a golf tournament and trap shooting, with receptions and luncheons for visiting ladies.

Report of Children's Fund.—The report of the Children's Fund of Michigan for the first year, ended April 30, 1930, shows that a health demonstration in Menominee County introduced modern methods of sanitation, medical inspection of school children, preventive disease campaigns, and health education movements. Arrangements have been made to establish the Northern Michigan Child Clinic at Marquette, to be operated at St. Luke's Hospital with assistance from the University of Michigan. Two health units, each comprising four counties, were established with headquarters at Grayling and West Branch. The Orthodontia Clinic at the Children's Hospital of Michigan, Detroit, was remodeled, enlarged and granted funds. To give dental service in rural areas, dentists trained in public health service were sent to thirteen counties, where defects in 85 per cent of the children's mouths were found. The trustees decided to supply ten counties with nurses for a limited time to encourage residents to engage nurses from their own funds. Nurses were sent to three counties to give instruction in prenatal care. Two women physicians were engaged to spend a month in a county, giving lectures and demonstrations on phases of mother and child care. Funds were given to the Michigan State Medical Society to conduct graduate clinics for physicians practicing children's specialties. This program resulted in the inspection of 10,280 school children by nurses; 3,593 preventive treatments for diphtheria; 1,492 vaccinations against smallpox; 3,354 physical examinations by physicians, and 7,593 children inspected by dentists. Funds were supplied for research on dental caries at the University of Michigan on orthodontia and on juvenile delinquency at Detroit. The latter is one of three centers in Michigan established by the Institute of Human Relations of Yale University. Funds were given to aid in a survey of child dependence made by the Child Welfare League of America that it might shape its policies to avoid duplication and effort; 552 dependent children in northern Michigan were aided by appropriations by the Michigan Children's Aid Society. The fund made an appropriation to establish a behavior clinic in Grand Rapids allied with the public schools, and provided funds for an experimental playground for preschool children, and helped the parent-teachers associations in the distribution of twenty-six loan collections of books to children removed from libraries, reaching 9,555 children. The Children's Fund is financing for three years a cooperative program with the department of public instruction and education for a health education course to be given at normal colleges. The trustees are at work on a child guidance program and have joined with the Individual Psychology Foundation and the Detroit Society for the Scientific Study of Character to demonstrate the value of psychiatric skill in treating problem children. The fund plans to erect a building for administrative offices and laboratory facilities located near the Children's Hospital of Michigan. The sum of $384,790.86 has been added as earnings to the contribution of Senator Couzens of $10,000,000. Appropriations totaling $740,697.92 have been made, of which $156,715.44 has been disbursed.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 11, 1930.

Surgery in the Future: "Hominal Physiology"

At the opening of the winter session of Guy's Hospital, Lord Moynihan delivered an address on "Surgery in the Immediate Future." He repeated his claim that surgery as a craft had almost reached its limits and said that he was unmoved by the criticisms which it had provoked. Under the caption "Surgeons as Prophets" it was pointed out (THE JOURNAL, Aug. 4, 1928, p. 332) that the same prophecy had been made by Erichsen nearly fifty years ago and proved to be quite erroneous, for Lister's discovery had not yet "revolutionized surgery," roentgen rays had not been discovered, and the procedures for viewing the interior of the hollow organs had not been introduced. Lord Moynihan on the present occasion said that the full fruit of Lister's work had now been gathered. Almost every organ had been made accessible to the surgeon; operations on these organs could hardly be extended. They were performed today with a degree of safety which, in the hands of the great masters, could be little if at all surpassed. Removal of the stomach or portions of intestine for cancer, of a lobe of the lung for neoplasm or bronchiectasis, suture of a wound of the heart, approaching the brain or cord to deal with lesions, could hardly be safer than they are in expert hands today. Safer methods may be found, earlier access to acute or malignant conditions may be obtained, it may be found that radium may render unnecessary the mutilations of surgery, but no one can hope to see the craft of surgery much more perfect. In many instances the very success of surgery had proved a cause of disaster. Gastro-enterostomy, perhaps unsurpassed by any other operations as a savior of life and a giver of health, had been extended beyond its legitimate bounds, with evil results. This surgical excess allowed the recrudescence of medical treatment of inveterate gastric and duodenal ulcer—a medical excess that was more serious.

If, then, surgery, as a mechanical craft, had reached its limit, what was its future? A change in its objective already was apparent. It had been the power by which structural disorders had been overcome by mechanical means. It was becoming the agent of control over the disorders of function, and its strength would derive from physiology. The growth of physiology had been stupendous, both in rapidity and in range, but little by little its interests in man were becoming more remote and it was no longer entitled to its name. It had made such close alliances with physics and chemistry that its identity was in danger and might be lost. Its true mission—to elucidate man's normal functions—was being less and less considered. Hominal physiology had interest for few physiologists. They had been busy with animal research and not seldom the results seemed insusceptible of application to the maladies of man. If the work of the laboratory is to be put to profitable use, physiologists must concern themselves more with human afflictions, especially with those which approximate so closely to the normal that only expert investigation of normal conditions can discover or appraise them. If the professors of physiology cannot be attracted to the study of man, it is time to consider whether chairs in "hominal physiology" should not be established with right of access to hospital beds and clinics, where the early stages of disease can be seen. Every one was too much concerned with advanced, or at least firmly established, disease. There were earlier phases of disturbed function which led, perhaps slowly, to gross conditions for which patients were admitted to the hospital. The physician or surgeon on the hospital staff is the last line of defense. Isn't there something better? Can't an advance guard be created? Why not fight at the outpost rather than at the citadel? A vast body of new knowledge should be created. Its only begetters will be men trained in laboratory work, together with the clinician.

The immediate requirement is a better knowledge of the normal man and of the "near normal," adnormal man. Physiologists are those best trained to acquire this almost nonexistent knowledge and a new science of "paraphysiology" is needed. The physiologist must return from his "journeys into a far country." After the work of Gaskell and Langley, a hint might have been expected as to the possibility of helping such conditions as, say, Hirschsprung's disease or Raynaud's disease by an attack on the sympathetic nervous system. The absence of a close affinity between laboratory worker and clinician, here as elsewhere, shows lack of vision of both. The surgeon must bring the science of structure and the science of function together after their long separation. The work of Royle and Hunter, followed by Wade, Robertson, Adson, and Learmouth, have shown how diverse maladies are amenable to relief by a surgical attack on the sympathetic. But much remains to be done. What is the significance, in colons removed for dysfunction, of those interesting changes found by Keith in Auerbach's plexus? In the immediate future surgery will concern itself with the sympathetic and parasympathetic in the neck, chest, abdomen and pelvis; with ductless glands, and with the questions of immunity. Will the physiologists return home to render assistance? Lord Moynihan finally protested against the attitude of the medical research council, which was founded to exert an inspiring influence on the progress of medicine, but was "too busy with little things, too aloof from the day-to-day practice of medicine, out of touch with the needs and desires of clinicians."

Eugenics at the Church Congress

Like birth control, eugenics is a topic much discussed in the press and at meetings of religious bodies. At the church congress Dr. Inge, dean of St. Paul's, urged that church people ought to include their duties to posterity among the new moral obligations which the advance of knowledge had laid on them. Eugenists had no wish to introduce the methods of the stud farm into human life, but they knew that a corrupt tree could not bring forth good fruit. Was the church to help those disinterested workers who desired to improve the qualities of future generations or to stop their further deterioration? A civilization that gave its whole attention to environment and paid no heed to inborn qualities was heading for disaster. Dysgenic selection was going on and cumulative effect must be degeneracy. If they said that as Christians this was no business of theirs, how could they justify the activities of the church in combating particular social evils? Should they confine themselves to cure and leave prevention to others? In their own families, eugenists, if consulted, would tell them when to put their foot down on a son or daughter contemplating a biologically unsuitable marriage.

Dr. A. F. Tredgold, member of council of the Eugenics Society and the leading authority in this country on mental deficiency, said that while there was a great amount of social inefficiency due to physical unfitness, more was due to mental unfitness and it was of even more importance. While a proportion of physical and mental unfitness was caused by faulty environment, the great bulk was transmitted by heredity. The prevention of propagation by the mentally and physically unfit would improve the race and considerably diminish social inefficiency. For some time breeding from the dregs rather than from the cream of the people had been going on. Increased medical knowledge and facilities for treatment, humanitarian sentiment, and the trend of social legislation combined to encourage the survival and propagation of the unfit and to make life easier for them than for the fit. They did this to an extent which nature, in the absence of human intervention, would not permit. He did not suggest that a stage had been reached at which there was a preponderance of unfitness, but

there were indications that the number and ratio of the unfit were increasing. If the process was allowed to continue, national degeneracy was merely a matter of time. The only way to avoid it was by increasing the propagation of the fit and preventing that of the unfit. Partial intervention by man in the shaping of his destiny could end only in disaster. Not only was eugenics necessary, but the logical consequence of the steps he already had taken. Before the state would take some definite action, the public conscience must be awakened and the essential thing was the education of public opinion as to the responsibilities of parenthood. In this the church, with its opportunities of teaching, could render incalculable service to mankind.

An "Honors Medical School"

St. Mary's Hospital is one of the smaller London hospitals with a medical school. It contains 350 beds, but upward of 700 beds are available for clinical teaching in affiliated institutions, so that there is no lack of material for this purpose. But the school is ambitious and progressive and has achieved something not attempted by the larger schools. Its motto is "quality, not quantity" and it is what its dean calls an "honors medical school." It confines the number of students admitted each year to fifty, who are not, as in other schools, simply men who have passed a qualifying examination entitling them to be medical students, but picked men. This year forty-eight men competed for entrance scholarships, which are awarded not by examination but by nomination, after careful consideration of the records and reports by headmasters and college tutors. In the first instance the candidates are singled out by those who report on them as the most deserving and promising of their year. The introduction every year of a considerable number of such men means that they constitute a fair proportion of the total students of the school, and this proportion is increasing. It provides the nucleus of an honors school such as exists nowhere else in England. The school is being rebuilt and will soon have buildings and laboratories of the most modern type, which will embody everything that experience of America and the continent has proved desirable. The Institute of Pathology and Research is under the personal direction of Sir Almroth Wright, whose work on vaccine therapy is so widely known.

"The Peking Man"

In The Journal, May 10, p. 1516, it was stated that Prof. Elliot Smith regarded the discovery of a skull at Choukoutien, near Peiping, as probably the most important contribution to knowledge of early Pleistocene man that has been made. It is so important that a special name, *Sinanthropus*, has been given to this new member of the human family. It presents features analogous to *Pithecanthropus* and Neanderthal man but belongs to a genus distinct from both. The base of the skull, unfortunately unknown in the case of *Pithecanthropus*, displays startlingly simian characters. Prof. Elliot Smith is now visiting Peiping at the invitation of the Chinese government for the purpose of studying the *Sinanthropus* remains. In a lecture delivered before the Chinese Geological Society he stated that the remains are "the most valuable and illuminating evidence of man's early history yet revealed." He declared that the judgment he had previously formed on the basis of written reports was an underestimate of the importance of the discovery, the significance of which transcends his most sanguine hopes. He considers that when the report of Dr. Davidson Black, the Canadian anatomist lent to the Geological Survey of China by the Rockefeller Foundation, on the cast of the brain cranium, now in course of preparation, is submitted, "a flood of light will be thrown on the organ responsible for conferring on man his human qualities of mind and skill."

Birth Control Sanctioned by Indian State

A step without precedent in India, or in the British empire, has been taken by the government of the Indian state of Mysore, which has given official approval to the establishment at the four principal hospitals of state birth control clinics. Dr. Subba Rao, the senior surgeon of Mysore and principal of the Medical College of Bangalore, an Indian who received his medical training in Madras and London, recently drew up proposals for the establishment of contraceptive clinics at the four large hospitals of the state. In submitting his scheme to the government he pointed out that many women were so debilitated by ill health or frequent child bearing that maternity was inadvisable both in their interests and in those of their progeny. He therefore suggested that they should be instructed in contraception by women physicians. He proposed that the women medical officers at the Victoria Hospital, the Maternity Hospital at Bangalore and two other hospitals at Mysore should be authorized to give this instruction to those who had bona fide reasons for acquiring it. He proposed that contraceptive appliances should be kept in stock at these hospitals and supplied at cost, and finally that Dr. C. V. Natarajan, who has made a special study of contraception in America, should cooperate with the women physicians by giving advice as to the development of the clinics. He made it clear that the women physicians would give advice only to married women who needed it for considerations of health or for economic reasons. It is announced in the Mysore government gazette that official approval has been given to the proposals, and expenditure has been sanctioned for the purchase of contraceptive appliances to be kept in stock at the hospitals.

PARIS

(From Our Regular Correspondent)

Oct. 8, 1930.

Variations in Efficacy of Antidiphtheritic Serum

Addressing recently the Academy of Medicine, Mr. Jules Renault, "inspecteur général" of the ministry of public health, presented a communication on the interpretation of the variations noted by physicians in the efficacy of antidiphtheritic serum, which, it appears, is not the same in different countries and at different times. The variations have usually been ascribed to the different mode of preparation—to the differences in the number of the antitoxic units. The ordinary French serum contains from 300 to 350 units, although the pharmacopeia requires only 250 units. The failures are due, according to Mr. Renault, to various causes. In the first place, there is the peculiar gravity of certain epidemics. There may be also other additional diseases, or association with pernicious microorganisms, such as the streptococcus. Sometimes the youth of the subject or the delay in treatment may be incriminated. The earlier the injection is given, the better chance there is of saving a child. He advised vaccinating children with the Ramon anatoxin at the end of the first year of life.

Congress of Plastic Surgery

The Société française de chirurgie réparatrice, plastique et esthétique, the founding of which was announced six months ago, held its first congress in Paris, October 3 and 4. Dr. Dartigues, the founder, was to have presided but the evening previous he had been taken to the hospital for an urgent operation. Dr. Aubert of Marseilles, vice president, and Professor Jiano of Bucharest served in his stead. The meeting was attended by about sixty members and guests. Certain practitioners had thought it wiser to be absent, as they had been convicted of having presented photographs of operations, in which traces of dishonest retouching had been discovered with a magnifying glass. The society attaches great importance to the presentation of a program that is honestly scientific and seeks to avoid being invaded by unscrupulous practitioners from certain institutes. Communications on skin grafts, autoplastic operations and the cosmetic improvement of scars made up almost the whole program. Professor Jiano reported in detail the reconstruction of a destroyed nose by the use of the skin

of the ring finger, which is left attached to the face for the whole duration of the cicatrization. The results, except for the loss of the little finger, are remarkably good. A scholarly paper was presented by Mr. Auguste Lumière of Lyons on the mechanism of the production of scars. He attributes to purely physicochemical and individual phenomena the disturbance of this process and the formation of keloids. Mr. Gucciardello of Vittoria, Sicily, described a case of reconstruction of a portion of the auricle by means of a reverted mastoid flap. Mr. Wallet read a paper on the radical treatment of hallux valgus and hammer toe. Mr. Bourguet of Paris dealt with the cosmetic surgery of displacements of the eyeball. Mr. Pierre Robin discussed the mode of deformation of the face in the child and in the adult in its relations to glossoptosis and the creation of the too elongated uvula. Mr. Stefani of Nice reported the application of electrocoagulation to the treatment of epithelioma of the eyelids. Dr. Maliniak of New York gave an account of rhinophyma and its complications.

Subsidence of Epidemic of Poliomyelitis

Although it is incomprehensible by what route the transmission occurs, sporadic cases of poliomyelitis are still observed in the remote regions of the primary focus; namely, Alsace. Some observations have been made in Strasbourg that tend to prove the important rôle of germ carriers. One of the suspected carriers is a physician, who is alleged to have established small foci of poliomyelitis among the children of families to which he had been summoned to treat patients with other diseases. The hypothesis that has been advanced in explanation is that the poliomyelitic virus is harbored by a great number of adults —probably in the nasal fossae—without manifesting virulence. Transmitted to young children when the seasonal conditions are favorable, it develops in them in its virulent form, and it is this new form, picked up and carried by the germ carrier, that gives to the disease an epidemic character. A form of prophylaxis has been proposed, which consists in the systematic disinfection, every day, of the nasal fossae, among the whole population—children and adults—of the regions of the area attacked.

Smallpox Vaccination in Paris

A report of Dr. Roux, addressed to the Conseil d'hygiène et de salubrité, of the department of the Seine, announces the results, last year, of the campaign against smallpox in Paris. Not a single case of the disease was notified. The efficacy of the vaccine employed was shown by the results of the primary vaccinations, more than 80 per cent of which "took." A total of 210,990 vaccinations were given, or 15,925 more than in 1928, mostly in the hospitals and maternities and in the public schools. During the year 1929, 42,521 living births were recorded in Paris, with a mortality of a little more than 10 per cent (4,305 deaths) during the first year of life. If from the number of births the number of children who died before the third month is subtracted, these probably not having been vaccinated as yet, there remain 40,108 new-born, 33,366 of which were vaccinated by the public services. To complete this figure, there should be added the primary vaccinations performed at the Hôpital des enfants assistés, where the total number of inoculations was 2,374, without any distinction being made between primary vaccinations and revaccinations. To these numbers should be added the vaccinations of infants performed in the homes, the number of which is unknown. The public services in Paris perform thus three fourths of the primary vaccinations. Few of the new-born in the capital escape vaccination against smallpox. About 4,921 children 11 years of age were revaccinated in the bureaus of charity and in the outpatient department of the hospitals; but almost all the children of that age were reinoculated in the various schools. It is not the vaccination service of the city of Paris that revaccinates the great majority of the men aged 20, but the service of the army medical corps, just before they are enrolled in their regiments. Those who are exempt from military service are nearly all revaccinated, for a recent certificate of revaccination is required of those entering the administrative services, or the trades or industries. The law is well enforced among this class of young men. This is not equally true of the young women of corresponding age. Many of them neglect to present themselves for revaccination. Thus, when an outbreak of smallpox occurs, it is the women who furnish the majority of victims. The number of persons who are not legally obliged to be revaccinated but who are revaccinated in Paris is considerable. In 1929, it amounted to more than 88,000. Two routine revaccination periods are held each year in the schools of the city of Paris, the first on the reopening of the schools, in October or November; the second in May or June. At the second session in May, the children are vaccinated who have entered during the year, together with those in whom the vaccination did not take in October. Not a single case of postvaccinal encephalitis, such as have been observed in other countries, has developed in Paris.

TURKEY

(From Our Regular Correspondent)

Ankara, Sept. 27, 1930.

Antimalaria Work

Communities which the ministry of health and social assistance has declared infected with malaria are obliged to report on all forms of malaria. Military organizations are to carry out antimalaria work conformable to the principles adopted by the ministry of health and are to report on measures taken to the directors of malaria control work or to the health department.

Antitrachoma Work

In communities where trachoma is prevalent, the ministry is to organize antitrachoma committees and establish institutions where treatments and operations are to be carried out gratuitously. Committees organized in trachoma control zones are authorized to register and examine the whole population and have those suffering from trachoma brought to the institution for treatment. Persons suffering from trachoma in the infectious stage are not allowed to attend schools, factories, workrooms or any institutions, governmental or private. In trachoma control zones the ministry of health, together with the ministry of education, is to decide on special measures in regard to school work. Military organizations are to carry out antitrachoma work conformable to the principles adopted by the ministry of health and are to report on measures taken to the health authorities of the community.

Control of Venereal Diseases

Persons suffering from any syphilitic condition are under obligation to seek treatment from a duly authorized physician. The responsibility for the treatment of children rests with the parents or with institutions caring for children. All practicing physicians are at the end of each month to report in writing to the respective departments of health new cases of syphilis, giving name of patient, age and the stage of the disease, and state whether the person has before been treated by a physician. Officials who unlawfully make use of any secret information are liable to punishment. Persons suffering from syphilitic conditions may secure treatment free of charge from a government or municipal physician or at a dispensary. The directors of health and social assistance are authorized to have examined persons suspected of spreading venereal diseases. Such persons are permitted to have themselves examined by a private physician and to present this certificate if they desire. Persons suffering from venereal diseases may be forced to undergo treatment and they may also be forcibly isolated and treated at a hospital if suspected of spreading the disease. If a person

suffering from venereal disease is lost sight of without having finished treatment, the attending physician is obliged to send a written information to the respective department of health and social assistance.

All physicians are obliged to provide persons suffering from venereal disease with a leaflet issued by the ministry of health on which the danger of the diseases and routes of infection is explained. In case of a child, information and a leaflet are given to the parents or to a person responsible for the child. Persons knowing that they suffer from a venereal disease who knowingly infect another person are liable to punishment, but this depends on whether a complaint is made. It is prohibited that an infant known to be syphilitic be given to a wetnurse. In communities where a large part of the population is suffering from syphilis, the ministry of health is to organize syphilis control committees and to provide the facilities for treatment. Syphilis control committees are authorized to examine and register the whole population of their respective zone and give treatment to those suffering from syphilis.

In the army, venereal disease control work is to be carried out by special departments. Persons suffering from syphilis in the infectious stage are not released from service until successfully treated. Those who contract syphilis during military service are to have their treatment entered on their records and are reported by the ministry of national defense to the ministry of health.

Antituberculosis Work

The names and addresses of all new cases of tuberculosis of the lung and larynx as well as those of persons having died from any other form of tuberculosis are to be reported. Physicians are to report to the nearest health department all deaths from tuberculosis within twenty-four hours and all new cases within eight days after diagnosis. A physician knowing that a tuberculous person intends to move is obliged to report this to the health department to which the case has previously been reported. The directors of hospitals, maternity hospitals, prisons and all other governmental, charitable or private institutions are to report within twenty-four hours all deaths from tuberculosis.

Physicians may avail themselves free of charge of the services of governmental laboratories where tuberculosis specimens may be sent for examination. On the advice of a governmental, municipal or other attending physician, the home of a tuberculous person may be disinfected free of charge. The ministry is authorized to isolate and treat at a hospital persons suffering from active tuberculosis who are liable to infect others.

Physical Examination Before Marriage

In all men and women intending to get married, a physical examination is required. A regulation is to be published by the ministry of health and social assistance with regard to special points to be considered in such examination. Persons suffering from syphilis, gonorrhea, soft chancre, leprosy or a mental disease are not permitted to get married. Unless they have been scientifically treated and are past the infectious stage or can present a certificate that they are cured, they cannot procure a marriage license.

Marriage is postponed for six months for persons suffering from advanced active tuberculosis. If at the end of that time the condition has not improved, another postponement for six months is to be decided on. At the end of such time the attending physician is obliged to advise both parties as to the danger of the disease and its effects on marriage.

To make sure that wetnurses do not suffer from venereal disease, tuberculosis or leprosy, they are to procure the certificate of a physician. Such certificates have to be renewed every six months. It is prohibited to have women who do not present such a certificate and who do not make any efforts to procure one serve as wetnurses.

Persons selling or serving foods or drinks, and hairdressers, are to have a physical examination every three months and renew the health certificate. If such persons are suffering from syphilis in the infectious stage, active tuberculosis, leprosy or a skin disease they are not permitted to carry on such work. Examinations are to be carried out free of charge by the municipal physician and, in a community where there is none present, by the government physician.

JAPAN

(From Our Regular Correspondent)

Sept. 8, 1930.

Sanitary Commission of Tokyo

When Mr. Nagata, new mayor of Tokyo, met the sanitary commission for the first time after his appointment, Mr. Yuasa, chief of the health section of the city, reported that the tuberculosis patients entrusted to the sanatoriums in the city amounted to 18,250 a year. So the expenditure for the next fiscal year (1931) is to be renewed.

Police Heads in Tokyo Discuss Health Problems

Under the auspices of the metropolitan police bureau, the heads of the police stations in Tokyo held a conference in the bureau, August 18. The sanitary problems discussed by them included house cleaning and disposal of filth; birth control; supervision of the midwives in the prefecture; treatment of trachoma and tuberculosis; public education on the prevention of dysentery, and supervision of barbers and women hair dressers. They decided to lay stress on birth control, agreeing that drugs and appliances to inhibit impregnation or facilitate early abortion methods should be strictly forbidden by police regulations.

The Business Depression and Hospital Fees

Japan has been affected by the depression of business so severely that more than 300,000 persons are out of employment. Some public hospitals, such as the hospital attached to the Osaka Medical College, that of the Osaka branch of the Japan Red Cross Society, and that of the Okayama Medical College, have made a reduction of 10 per cent in the hospital fee and some 20 per cent in the price of medicine. Some medical associations are opposed to the reduction, saying that the hospitals are courting notoriety too much. However, members of the house of representatives from the Seiyukai party, the opposition, as well as those from the Minseito party, are reported as having addressed to the minister of the interior a memorial concerning the reduction of medical fees in general. The hospital of the Shiga branch of the Japan Red Cross Society, at Otsu, is also reported to have decided to make a reduction of from 10 to 15 per cent at the beginning of September.

The Far East Association of Tropical Medicine

To the eighth congress of the Far East Association of Tropical Medicine, which is to be held at Bangkok, Siam, December 7-13, the following delegates have been appointed: Drs. B. Tanabe, imperial Japanese army; Y. Hiki, imperial Japanese navy; N. Onodera, department of education; S. Yamada, government institute for infectious diseases and Keio University. The department of the interior, the Chosen government, and the South Manchuria government will each send a delegate.

First Case of Psittacosis in Japan

A sailor whose birthplace was Nagoya fell ill soon after his arrival at Yokohama, June 17, from America and died at his native place, July 12, after suffering from continual diarrhea and emesis. The case is said to have been the first of psittacosis in this country. The home ministry is reported to be on the point of taking steps to check the importing of parrots from America.

BUDAPEST

(From Our Regular Correspondent)

Oct. 1, 1930.

The Spread of Trachoma in Hungary

Trachoma had taken root at the beginning of the last century on the boundaries of the country populated by Serbs, Croats, Slovaks and Roumanians. Prior to 1883, scarcely anything had been done to prevent this disease. Attention was called to trachoma by a court of justice. Dr. Feuer was then entrusted to examine the population of three districts, 100,000 persons, and he found that from 4 to 5 per cent of the population had trachoma. It was obvious that trachoma had assumed an endemic form in other parts of the country. The minister of the interior appointed Professor Feuer leader of a campaign, and in 1886 the Hungarian parliament passed a bill, the provisions of which are as follows: 1. Expenses connected with the treatment of indigent patients were to be borne by the state treasury. 2. Where the disease was most prevalent, eye specialists were to be sent to perform the treatment in the larger centers, to organize the treatment of patients in the villages, and to instruct district physicians in methods of treatment. 3. Temporary trachoma hospitals were to be erected. 4. In order to train medical officers, municipal, village and parish physicians in the pathology and therapy of trachoma, the minister ordered that courses of instruction be held in larger centers, and all participating physicians should get adequate remuneration for the duration of the courses in case they had to leave their place of residence. 5. The cost of all these measures were to be defrayed by the state. This law, however, was ineffective, owing to the lack of moral support from the public. In 1912 Professor Feuer died and Professor Emile Grosz was appointed government commissioner. He started with the following program:

1. Continuous observation of all trachoma patients by (*a*) notification; (*b*) examination of eyes in schools, factories and tenements, and of apprentices, domestic servants, demobilized soldiers and recruits; (*c*) general eye examinations of the population, this last measure to be applied exceptionally on the demand of the central authorities.

2. Free treatment in trachoma dispensaries; the medical service to be made by the local physicians, who were to get fixed salaries. The treatment done by these practitioners to be controlled by the district ophthalmologist, who was also the head of the district eye hospital, of about fifty beds.

3. Improvement of hygienic conditions in schools, factories and workshops; the foundation of industrial colonies in the trachoma-stricken districts, in order to check the movement of trachomatous workers, and the supporting of the families of trachoma patients who were incapacitated. Soldiers suffering from trachoma were to be treated in military hospitals. Those cured were to join their regiments.

4. For the advancement of knowledge in the pathology and treatment of trachoma, competitions with attractive prizes. For enlightenment of the public, occasional popular courses.

Professor Grosz's efforts bore fruit. In several cities, special trachoma hospitals, and in existing hospitals, trachoma wards and eye dispensaries were erected until there were 1,200 beds available for trachoma patients. In 1911, twelve trachoma and ninety parish physicians were entrusted with the treatment of patients. He succeeded in persuading the military and civilian authorities to work hand in hand against trachoma. The Conscription act of 1913 contained the provision that those suffering from trachoma, yet otherwise fit for military service, should be placed in a hospital managed by specialists three months prior to the regular time of entrance. Those cured joined their regiments, while those who were incurable were submitted to superior decision at the end of December.

During the late war, the war ministry formed trachoma regiments. The official report of these formations, which, moreover, had been engaged in action, showed that 78.5 per cent were cured, 21.2 per cent still required treatment, and only 0.3 per cent were certified as unfit for military service. Looking forward to the time of demobilization, Professor Grosz adopted extensive precautionary measures. The revolution, however, prevented the execution of those measures. The men of the trachoma wards were scattered and thus carried the disease to areas hitherto immune.

The campaign against trachoma had been successful up to the outbreak of the war. Patients with trachoma were reduced at the dispensary of the Royal Hungarian Ophthalmologic Clinic from 7.2 per cent in 1891 to 2 per cent in 1910. In Torontal County, where every inhabitant was examined in 1883, trachoma was reduced in seventeen years from 4.5 per cent to 1.2 per cent. Of the recruits of the Hungarian army, upward of 2,000 annually were rejected on account of trachoma. In 1924 Dr. J. Brana, surgeon-in-chief of the army, compiled a map on which the soldiers suffering from trachoma were grouped according to the districts to which they belonged. The map showed that the disease was rife throughout the land.

The minister of public welfare felt moved in 1926 to make new inquiries in the schools, institutes, prisons, factories and tenements. The result was that, of 8½ million inhabitants, 10,000 trachoma patients were brought to light. Of 829,284 school children, 3,257 were found to suffer from trachoma. A terrible picture of the spread of trachoma is afforded by two districts in Zala County, where examinations were carried out by reliable specialists. Dr. William Schiller discovered that, out of 3,214 inhabitants examined in one district, 1,247, that is, 39 per cent, were suffering from trachoma. Dr. Lénard found a family in which ten, and another in which eleven, and a third in which eight members were infected with trachoma. These revelations caused the minister to entrust with the treatment competent physicians whose emoluments were insured by the state.

Statistics from the eye clinics show that this evil has taken deep root. In the dispensaries belonging to the eye clinics, the number of trachoma patients in Budapest is 1.5 per cent, in Szeged 10 per cent, in Pécs and Debreczen, respectively, 5 per cent. The difficulty of the situation is shown in the fact that of the trachoma patients examined at the university eye clinic number 1 in Budapest upward of 50 per cent were suffering from pannus, so that the visual power was already endangered. Notwithstanding that the finances of Hungary are weak, the sum of 81,000 pengö ($16,200) has been appropriated for the present year for the campaign against trachoma. Besides this, the sum of about 245,000 pengö has been requested in respect of hospital attendance.

There are twenty-two physicians entrusted with the treatment of trachoma, while fifty-nine dispensaries have been founded. In postwar Hungary, there are 1,200 beds available for the treatment of eye patients in university clinics and eye wards, of which 316 are for trachoma patients. The number is entirely inadequate.

The Budapest Royal Hygienic Institute

The Budapest Royal Hygienic Institute, which was opened two years ago, is the best equipped institute in Europe. At present there is an Italian commission of five members making a study of the institute, the intention being to erect a similar one in Italy. Some days ago the Turkish government applied to the Hungarian government requesting it to allow that the director of the institute, Dr. Johann, spend three months in Turkey in order to supervise and direct the new hygienic institute. The Turkish institute was erected in Ankara and it is planned to duplicate the equipment and methods of the Budapest institute. The chief work of the Ankara institute will be the training of medical officers of health. Professor Johann accepted the invitation, and he will shortly leave for Turkey with two assistants.

BERLIN

(From Our Regular Correspondent)

Oct. 6, 1930.

The Meaning of Life

At the recent International Congress of Individual Psychology, held in Berlin, Alfred Adler, the Vienna psychologist, delivered a noteworthy address on "The Meaning of Life." The subject can, of course, be viewed from widely different angles, and often one may even be inclined to ask whether life has in reality any meaning. One of the possible solutions is found in the fact that many persons base their hopes on a better world beyond the grave. "Individual psychology" interprets the meaning of life in a definite manner and bases on its interpretation conclusions of a practical nature. Individual psychology starts with the assumption that every human being has a life plan, a trend and a final objective peculiar to himself, although the individual himself may be unconscious, or only partly conscious, of the fact. The chief purpose of man is, then, to make this life plan a reality and to attain that final objective. The instinctive desire for such a realization is, however, often restricted by family and social considerations and also by bodily conditions. A sense of powerlessness in the face of unfavorable conditions may easily give rise to feelings of inferiority, which will serve to check one's development and hamper the realization of the life plan. In endeavoring to compensate for this inferiority, the individual comes into conflicts with himself and his environment. If one examines from this point of view children who are hard to manage and to educate, neurotics, persons mentally abnormal, criminals, suicides and sexual perverts, there is frequently found a lack of what Adler terms "community sense," or interest in the common welfare of their community. Any one lacking this sense, or this quality, is unable truly to solve the problems of life. The inner mental capacities of the individual can be developed only as capacities possessed in common with other members of the community and only in cooperation with the community. The "ego" in its thousand variations is differentiated chiefly by the degree of community sense. Therein lies the most profound meaning of life.

One chief purpose of individual psychology is to prevent the person born with inferior vital organs from becoming an invalid or a neurotic, and to show that the person afflicted with social impairments need not follow an asocial or antisocial course. In other words, to convert asocial tendencies into social aspirations is the task, or, expressed in terms of individual psychology, to encourage the discouraged and to aid in overcoming the resistance in the organism and the obstacles of one's surroundings and environment. It has been proved that, working from the principles of individual psychology, good success may be achieved in the training of children who are recognizably hard to manage. But it is difficult to apply this therapeutic art and not every one has the capacity for it. There are no logical, mathematically exact solutions, and Adler does not assume to possess any infallibility in the application. A cure can be effected only through bringing the subject into a state of reconciliation with the problems of life; that is, by causing him to recognize the aberrant nature of his aims in life and by strengthening the community sense, two important manifestations of which are the courage to live and the making of contributions for the general weal. A cure can be effected only through application of the principle of "Know thyself," for which, however, individual psychology, with its artistic technic, though not easily understood and not easily applied, constitutes an excellent guide.

The Heidelberg Orthopedic Congress

The jubilee congress of the Deutsche orthopädische Gesellschaft, held in Heidelberg recently, was well attended by German and also foreign physicians. Professor von Baeyer, the chairman of the society, opened the session with an address in which he gave an interpretation of the term "orthopedics." He stated that "orthopedics" has as its objectives the prevention, the detection and the treatment of enduring functional disturbances of the motor apparatus. An anniversary address was delivered by the Heidelberg pathologist Ernst on the subject "Structure and Function." Spitzy of Vienna presented a paper on the pathologic motor disturbances of the arm, and Steindler of Iowa discussed arm paralyses. Among the large number of papers presented, special interest is attached to that of Böhm of Berlin on "Explanation of Certain Defective Forms of the Legs" and that of Schrader of Heidelberg on "Principles of Mechanical Treatment in Orthopedics." Professor Ludloff of Frankfort discussed treatment of tuberculosis of the bone. Hohmann of Frankfort proposed a resolution that was unanimously adopted to the effect that—in view of the war injured, state aid for cripples, the prevention of bodily injuries in the oncoming generation, and the provision of bandages and prostheses for persons injured in accidents—orthopedics should be made one of the subjects in which, according to the new program for medical examinations, candidates for the degree of doctor of medicine must be examined.

Is Social Aid Exaggerated?

One hears, of late, such questions as these: Under the present conditions of universal stress, does not social aid with relation to public health take on an exaggerated character? Does it accomplish what its champions claim? Does it not weaken the feeling of self-reliance? Does it not tempt many to take refuge in the perception of some personal pathologic condition? At a recent session of the society Soziale Krankenhausfürsorge, Professor Gottstein, retired "ministerial director," gave his personal reactions to some of the foregoing questions. Since its foundation in 1916, this society has given aid to nearly 5,000 persons in the university clinics of Berlin. Gottstein would not admit that the questions cited were more than partially justified—in the main they are exaggerated. He rejects them, however, entirely as far as social aid to hospital patients is concerned. The movement is purely social to the extent that it takes an interest in the economic conditions of the hospital inmates and supplies aid when needed. But its interest in social hygiene goes further than that and it must develop more in this direction by combining with the aid given in the hospital the aid needed after dismissal, in order that gains made in the hospital may be preserved, recurrences may be prevented and the earning capacity remain unimpaired. This applies more particularly to patients under treatment for malignant tumors, tuberculosis, venereal diseases, and mental disturbances, but also to patients with diabetes and to many persons with gastrointestinal disorders.

The society furnishing aid to hospital patients must give help to the physician and to the nurse in the hospital and support them in their respective tasks. More and more, the sick-bed is migrating from the individual home to the hospital, while treatment is carried on more on the wholesale plan. Under no circumstances must the patient in the hospital be allowed to become effeminated. Cooperation in carrying out occupational therapy is one of the important tasks of the movement. The recent development of the movement has been so much in the direction of health care that it must be taken out of the realm of the welfare authorities and placed in the hands of the health authorities.

After the patient is dismissed from the hospital, social aid for hospital inmates must be applied in accord with the attending physician. It must take the form of direction and of instruction. The patient must himself recognize the fact that, after dismissal from the hospital, he must submit to observation. The workers of the society must endeavor to awaken in him a feeling of self-reliance and an understanding of the needs of the situation, in order that he may come to recognize his own responsibility and his duty to preserve his health in the interest of himself and of the community.

Light as a Defense Against Disease

The main assembly of the Deutsche Gesellschaft für Gewerbehygiene was held recently in Breslau. During the course of the eventful session, which was attended by some 600 members and guests from Germany, Austria, the Saar region, Danzig, Switzerland, Hungary, Jugoslavia, Czechoslovakia, Poland, Japan and other countries, many papers were presented dealing with the hygienic conditions that must receive consideration in the building of homes and the planning of cities, and also in the organization of industrial plants and in the laying out of offices.

Of especial interest for a larger circle were the words of Prof. Dr. von Drigalski, "stadtmedizinalrat" of Berlin, on the topic "Labor and Dwelling." He called attention especially to the danger of the bacterial content of the air. In the light of present knowledge, it is by no means an heroic experiment to take a deep breath over soil inoculated with cholera bacilli, for bacilli are to be found in the liquids. The large number of relatively harmless causative agents of inflammation contained in the "living dust" of the air is evidently the source of many inflammations of the throat, to which man pays little attention, but also of many rheumatic infections. He demanded an extension of research from the field of rheumatism to that of sore throat. Even if no acute disorder develops, the organism is severely taxed by its constant struggle with the causative agents and is thus weakened in its resistance.

The best means of defense, he said, was light and light surroundings, rooms with white walls. The chemical action of light is underestimated. Whereas red, yellow and, to a certain extent, green light exert chiefly a warming effect, the short-waved rays, toward the direction of the violet, are more chemically active. It was formerly the supposition that the chemical action of light is confined to the skin—that it does not penetrate the deeper layers. Investigations have proved the assumption false. The tanning of the skin by the sunlight is more than a mere "beauty aspect"; it effects a strong stimulation of the circulation and thus also of general metabolism. The chemical action of bright sunlight in living rooms becomes evident through the fact that the bacterial content of the air is thereby considerably diminished or even entirely eliminated.

In addition to the stimulation of light, the so-called work stimulation is important for the preservation of health. Idle tissues not only do not develop but even atrophy. The most favorable frontage for isolated houses is toward the north, since the rooms toward the east and also the rooms toward the west have the sunlight for half a day. The living rooms must by no means be impaired by the use of unsuitable paint and decorations.

Marriages

AUGUST L. FIPP, Glandorf, Ohio, to Miss Marie Lillian Bause of Hollywood, Calif., in Ferrin Park, Wis., October 14.

BEN HAMILTON NICHOLSON, Nashville, Tenn., to Miss Winifred Tucker of Tintah, Minn., September 2.

DAVID C. MORTON, Louisville, Ky., to Mrs. Elizabeth Booker Williams of Richmond, Va., September 11.

DUNCAN BRUCE WILEY, Utica, Mich., to Miss Lorraine LaCroix of Mount Clemens, September 17.

ARCHIBALD MURDOCH MCKEITHEN, Louisville, Ky., to Miss Louise Wheat Bulkeley, August 15.

ROBERT H. DURHAM, Detroit, to Miss Mary Louise Edwards of Sileo City, N. C., September 3.

GEORGE L. PERUSSE, JR., Chicago, to Miss Henrietta Bird of Wilmette, Ill., September 30.

WILLIAM E. RANGE, Collinsville, Ill., to Miss Grace Hallworth, September 14.

MILTON H. SEIFERT, Sherburn, Minn., to Miss Laura Dupont, May 31.

WILLIAM PHILPOT, Augusta, Ga., to Miss Mary Bowles, July 14.

Deaths

John Aloysius Ceconi ✠ Boston; Tufts College Medical School, Boston, 1904; director of medical inspection in the Boston public schools; formerly medical inspector, diagnostician, epidemiologist and director of the bureau of communicable diseases, Boston Health Department; served during the World War; aged 49; died, September 21, in the City Hospital, of cholelithiasis and myocarditis.

Elizabeth L. Peck ✠ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1885; member of the American College of Surgeons; for many years on the staff of the West Philadelphia Hospital for Women, and the Philadelphia General Hospital; aged 75; died, September 30, of carcinoma of the breast.

Ethelbert Hines Galloway, Jackson, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1903; member of the Mississippi State Medical Association and the American College of Surgeons; on the staff of the Mississippi Baptist Hospital, where he died suddenly, August 26, of heart disease, aged 50.

Isaac G. Shallcross, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1887; member of the American College of Surgeons; professor emeritus of rhinology and laryngology at his alma mater; on the staff of the Hahnemann Hospital; aged 68; died, September 21, of angina pectoris.

Robert Harold Morris, Kansas City, Mo.; Barnes Medical College, St. Louis, 1896; Tulane University of Louisiana School of Medicine, New Orleans, 1914; member of the Missouri State Medical Association; served during the World War; aged 54; died suddenly, August 24, of cerebral hemorrhage.

Paul Kreye, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; aged 76; formerly on the staffs of the Cook County Hospital, Columbus Hospital, St. Joseph's Hospital and the American Hospital, where he died, September 17, of tumor of the left lung and arteriosclerosis.

Robert Nebinger Meisenhelder, Hanover, Pa.; Jefferson Medical College of Philadelphia, 1871; member of the Medical Society of the State of Pennsylvania; aged 84; on the staff of the Hanover General Hospital, where he died, August 20, of injuries received when struck by an automobile.

John Paul Benson, Joliet, Ill.; Rush Medical College, Chicago, 1902; member of the Illinois State Medical Society; served during the World War; on the staffs of the Silver Cross Hospital and St. Joseph's Hospital; aged 53; died suddenly, September 12, of cerebral hemorrhage.

Thomas Jefferson Proffitt, Elk Park, N. C.; University of Louisville (Ky.) School of Medicine, 1903; member of the Medical Society of the State of North Carolina; aged 57; died, September 23, in the Grace Hospital, Banner Elk, of injuries received in an automobile accident.

John Edwin Hays ✠ Louisville, Ky.; Hospital College of Medicine, Louisville, 1880; at one time professor of anatomy and dermatology at his alma mater; formerly on the staff of the City Hospital; aged 71; died, September 20, of coronary thrombosis and myocarditis.

Emily Frances Pope, Boston; New England Female Medical College, Boston, 1870; member of the Massachusetts Medical Society; for many years on the staff of the New England Hospital for Women and Children; aged 84; died, August 28, of cardiorenal disease.

Henry C. Mitchell, Carbondale, Ill.; Chicago Medical College, 1879; member and past president of the Illinois State Medical Society; member of the American College of Surgeons; aged 74; died, October 2, in a hospital at Jacksonville, of arteriosclerosis.

Lewis Van Gilder Guthrie ✠ Huntington, W. Va.; College of Physicians and Surgeons, Baltimore, 1889; member of the American Psychiatric Association; superintendent of the Huntington State Hospital; aged 62; died, September 20, of chronic nephritis.

Arlington Pond ✠ Cebu, P. I.; University of Vermont College of Medicine, Burlington, 1895; veteran of the Spanish-American and World wars; served in the U. S. Public Health Service; aged 57; died, September 19, following an operation for appendicitis.

Clarence Edward Kinley, Costa Mesa, Calif.; Hahnemann Medical College of the Kansas City University, Kansas City, Mo., 1901; formerly professor of pediatrics, Kansas City Hahnemann Medical College; aged 52; died, August 5, of diabetes mellitus.

Henry S. Beers, New York; Bellevue Hospital Medical College, New York, 1887; member of the Medical Society of the State of New York; on the staff of the Harlem Hospital; aged 73; died suddenly, September 6, in Kenoza Lake, of myocarditis.

Joseph Monroe Stanley, Banks, Ala.; University of Tennessee College of Medicine, Memphis, Tenn., 1909; member of the Medical Association of the State of Alabama; aged 43; died, August 29, in a hospital at Troy, of intestinal obstruction.

Joseph Solomon Lieb, Brooklyn; Long Island College Hospital, Brooklyn, 1920; on the staff of the Brownsville and East New York Hospital; aged 32; died, September 13, in the Mount Sinai Hospital, New York, of acute leukemia.

George Tancrede Lamarche, Putnam, Conn.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1887; member of the Connecticut State Medical Society; aged 66; died, September 14, of chronic myocarditis.

John N. Hess, New Marion, Ind.; Medical Department, University of Tennessee, Nashville, 1881; member of the Indiana State Medical Association; formerly county coroner; aged 76; died, in September, of pneumonia.

Dorsey Paul Etzler, Woodsboro, Md.; University of Maryland School of Medicine, Baltimore, 1915; served during the World War; aged 40; died, in September, at Blue Ridge Summit, Pa., of pulmonary tuberculosis.

Elmer W. Cashman ⊕ York Springs, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1886; president of the bank, town council and school board; aged 69; died, September 6, of cerebral hemorrhage.

Albert W. Reddish, Sidney, Ohio; Homeopathic Hospital College, Cleveland, 1883; member of the Ohio State Medical Association; formerly member of the school board; aged 70; died, in September, of heart disease.

William F. McManus, Chattanooga, Tenn.; Medical Department, University of Tennessee, Nashville, 1897; formerly county physician and president of the board of health; aged 65; died, September 11, of myocarditis.

Robert Boyd Andrews ⊕ Belvidere, Ill.; Chicago Homeopathic Medical College, 1896; past president of the Boone County Medical Society; served during the World War; aged 57; died, August 15, in St. Joseph's Hospital.

Louis Irving Mason ⊕ Willimantic, Conn.; Medical Department of Columbia College, New York, 1891; served during the World War; on the staff of St. Joseph's Hospital; aged 64; died, September 29, of pneumonia.

Henry K. Du Bois, Port Orange, Fla.; Bellevue Hospital Medical College, New York, 1870; member of the Florida Medical Association; formerly mayor of Port Orange; aged 83; died, September 9, of nephritis.

H. Valentine Wildman, Sr., New York; University of Michigan Medical School, Ann Arbor, 1880; consulting neuropsychiatrist to the U. S. Veterans' Bureau; aged 72; died, September 24, of heart disease.

Edward Wilbur Vis ⊕ Grand Rapids, Mich.; Grand Rapids Medical College, 1903; served during the World War; aged 49; died, September 19, in a hospital at Waukesha, Wis., of aortic and mitral stenosis.

John Jay Farley, Belleville, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1873; M.R.C.S., England, 1874; for many years county jail physician and coroner; died, June 28.

Isham Edgar Perkins, Jackson, Tenn.; Vanderbilt University School of Medicine, Nashville, 1891; aged 60; died, September 20, in the Crook Sanitarium, of chronic nephritis and myocarditis.

Charles Elliot Thompson, Los Angeles; Cooper Medical College, San Francisco, 1894; member of the California Medical Association; formerly health officer of Dunsmuir; aged 60; died, July 25.

Newton L. Moore, Palmer, Texas; Medical Department, University of Tennessee, Nashville, 1890; member of the State Medical Association of Texas; aged 70; died, August 26, of heart disease.

Clarence Joseph Shafer, Norwood, Ohio; University of Cincinnati College of Medicine, 1921; aged 34; died, September 20, in the Good Samaritan Hospital, of acute hemorrhagic pancreatitis.

Edward Burtson Kellogg ⊕ Ypsilanti, Mich.; Michigan College of Medicine and Surgery, Detroit, 1901; aged 54; died, September 18, of acute suppurating sigmoid diverticulitis and peritonitis.

Philip Henry Killey, Vivian, W. Va.; Medical College of Virginia, Richmond, 1872; member of the West Virginia State Medical Association; aged 81; died, September 1, of acute uremia.

William Paul Tebault, New Albany, Ind.; College of Physicians and Surgeons, Baltimore, 1883; member of the Indiana State Medical Association; aged 65; died, September 26.

Robert Lee Crawford, Miami, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1912; served during the World War; aged 40; died in August in Havana, Cuba.

Robert Malone King, Wyoming, Ill.; Louisville (Ky.) Medical College, 1898; member of the Illinois State Medical Society; aged 66; died, September 22, of heart disease.

Frank Louis Hodges, Monroe, Wis.; Rush Medical College, Chicago, 1900; member of the State Medical Society of Wisconsin; aged 59; died, September 4, of pneumonia.

Ole Mork, Blair, Wis.; King Fredericks University Faculty of Medicine, Oslo, Norway, 1900; member of the State Medical Society of Wisconsin; aged 56; died, August 2.

Frederick William Comings, Eugene, Ore.; University of Vermont College of Medicine, Burlington, 1886; aged 72; died, July 3, in Salem, of chronic myocarditis.

Charles Wessales Brodhead, Palisades Park, N. J.; New York Homeopathic Medical College and Flower Hospital, 1912; aged 46; hanged himself, September 3.

William Wright Milligan ⊕ Burlington, Iowa; State University of Iowa College of Medicine, Iowa City, 1897; aged 64; died, September 19, in a local hospital.

John J. Lancaster, Trezevant, Tenn.; Medical Department, University of Tennessee, Nashville, 1898; aged 67; died, September 21, of carcinoma of the lung.

Asahel Wesley James, San Diego, Calif.; Rush Medical College, Chicago, 1899; aged 62; died, in September, of an overdose of narcotics, self-administered.

Oscar P. Schaub ⊕ Winston-Salem, N. C.; Baltimore Medical College, 1898; aged 57; died, September 8, in a local hospital, of cerebral hemorrhage.

John H. Talbott, Hollywood, Fla.; Indiana Medical College, Indianapolis, 1875; aged 79; died, September 18, in Forest Hills, N. Y., of angina pectoris.

R. Furman Divver, Anderson, S. C.; Philadelphia University of Medicine and Surgery, 1868; aged 89; died, September 14, of cerebral hemorrhage.

Charles H. Stimson ⊕ Newark, Ohio; Bellevue Hospital Medical College, New York, 1879; aged 80; died, September 13, of pernicious anemia.

Luther W. Bell, Schoolfield, Va.; Memphis (Tenn.) Hospital Medical College, 1909; aged 48; died, September 21, in Danville, of cholelithiasis.

Edward Cook ⊕ Bellport, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1904; aged 51; died, September 7.

Warren H. Willyard, Kokomo, Ind.; Kentucky School of Medicine, Louisville, 1907; aged 66; died, September 24, of carcinoma of the liver.

Adam Fuhrmann, St. Louis; St. Louis Medical College, 1876; aged 76; died, September 8, in the Lutheran Hospital, of mesenteric thrombosis.

Daniel W. Bottorf, Astoria, Ill.; Missouri Medical College, St. Louis, 1899; also a dentist; aged 71; died, September 13, of heart disease.

Ira Lee Goodwin, Lake Providence, La.; Memphis (Tenn.) Hospital Medical College, 1910; aged 45; died, in August, of chronic myocarditis.

Lauren Jones, Daytona Beach, Fla.; Lincoln (Neb.) Medical College, 1908; aged 64; died suddenly, September 6, in Waynesville, N. C.

Helen Watson Winternitz, New Haven, Conn.; Johns Hopkins University School of Medicine, Baltimore, 1910; aged 45; died, April 25.

H. Hennerich Groth, Dayton, Ohio; Hahnemann Medical College of Philadelphia, 1879; aged 82; died, September 25, of arteriosclerosis.

Benjamin F. Edgington, Warren, Ind.; Curtis Physio-Medical Institute, Marion, 1889; aged 80; died, September 13, of heart disease.

John Lafayette Harrison, Winnsboro, S. C.; Atlanta College of Physicians and Surgeons, 1912; aged 54; died, August 30.

Bureau of Investigation

SANOVAPOR

Another Cure-All of the Liquozone Type

Sanovapor Laboratories, Inc., of Huntington, W. Va., put out a nostrum, Sanovapor, that is recommended for such conditions as: Catarrh, colds, hay fever, asthma, bronchitis, tonsillitis, sore throat, stomach, liver, kidney and bowel disorders, diseases of women, pyorrhea, gastritis, gastric ulcer, diabetes, Bright's disease, high blood pressure, piles, cuts, scalds, burns, wounds, sprains, abrasions, insect stings, old sores, boils, carbuncles, abscesses—and halitosis!

The therapeutic *modus operandi* of Sanovapor has been thus described:

"SANOVAPOR sterilizes the blood and vitalizes it; it neutralizes the poisons and enables the poisons to pass through the bowels, kidneys, lungs and skin, the four channels of elimination.

"SANOVAPOR gives to the blood an additional amount of the same elements obtained by the atmosphere through the lungs. When SANOVAPOR is used nothing injurious remains in the system.

"SANOVAPOR stimulates healthy cell growth, causing unhealthy tissue to be thrown off, then eliminated through the system. It has a permanent value to the entire body through its tonic action."

The advertising matter also goes into detail regarding what is described as the "Specific Action of Sanovapor," thus:

"First action:—SANOVAPOR penetrates the air passages—nose, mouth, throat, sinuses, Eustachian tubes in the ears, bronchial tubes and lungs, from lungs into blood-stream by inhalation.

"Second action:—When swallowed SANOVAPOR enters Alimentary canal, or gastro-intestinal tract, consisting of mouth, gullet, stomach, appendix, small and large intestines, rectum to anus.

"Third action:—SANOVAPOR reaches every part of the body through the blood-stream."

Especially does Sanovapor seem to be pushed as a remedy for diabetes. Like practically every other "patent medicine" sold for this condition, the exploiters emphasize the fact that the patient must carefully diet. Where this is done, the Sanovapor, of course, could be poured down the sink and equally good—or better—results obtained.

Because of the inquiries that have came in to the Bureau of Investigation regarding this product, an original specimen of Sanovapor was submitted to the A. M. A. Chemical Laboratory with the request that some analytical work be done on the product. The Laboratory report follows:

LABORATORY REPORT

"One original bottle of Sanovapor (Sanovapor Laboratories, Inc., Huntington, W. Va.) was submitted to the A. M. A. Chemical Laboratory for examination. The bottle contained 475 cc. (approximately one pint) of a lemon-yellow liquid of a pungent odor and bitter taste, and possessing a specific gravity of 1.0016 at 25° C. Qualitative tests indicated the presence of sulphur dioxide, sulphate, and a yellow coloring material. Chlorides and heavy metals were not found.

"Quantitative determinations yielded the following:

Total solids	0.095 per cent
Sulphur dioxide (SO_2)	0.064 per cent
Sulphate ($SO_4^=$)	0.157 per cent
Total acidity after oxidation with hydrogen peroxide	1 N x 0.0585

"Those values may be calculated to:

Sulphuric acid	0.16 per cent
Sulphur dioxide[1] (calculated to sulphurous acid equivalent to 0.08 per cent)	0.06 per cent

"From the foregoing, it appears that this product consists essentially of a solution containing approximately 0.06 Gm. of sulphur dioxide and 0.17 Gm. of sulphuric acid, U. S. P., in 100 cc., and possessing a yellow color."

It is evident from the chemists' report that Sanovapor is yet one more imitation of the old Radam's Microbe Killer. Many years ago, Radam's Microbe Killer, which emanated from New York City, consisted of a trifling amount of sulphuric acid and sulphurous acid, in water to which was added a little red wine. Twenty-five years ago when it was being pushed in the United States, the exploiters had dispensed with the wine (which merely added to the cost) and the stuff was reported by Dr. Harvey W. Wiley, on the basis of an analysis made by the federal chemists, to have the following composition:

"Sulphuric acid	0.59 per cent
"Sulphurous acid	0.016 per cent
"Inorganic matter	0.013 per cent
"Water by difference	99.381 per cent"

Radam's Microbe Killer was repeatedly declared misbranded under the national Food and Drugs Act, but like all medical fakes, continued to flourish so long as the public was ignorant of the facts and newspapers could be found to carry the advertisements.

Out of the ashes of Radam's Microbe Killer, there arose a similar product, exploited from Chicago under the name Liquozone. This preparation was recommended for fifty-seven varieties of human ailments, ranging alphabetically from asthma, blood poison, cancer, consumption and goiter to leucorrhea, malaria, rheumatism and throat trouble. Liquozone was analyzed and reported to have the following composition:

Sulphuric acid	0.9 per cent
Sulphurous acid	0.3 per cent
Water	98.8 per cent

Then, there was Septicide, a Milwaukee nostrum, which was recommended for practically everything from cancer to "sweaty feet." When analyzed by the government chemists, it, also, was found to consist of small quantities of sulphur dioxide and sulphuric acid in water!

Then came Oxytonic, which like its predecessor, Liquozone, also hailed from Chicago. It was advertised as a "tonic germicide" for internal and external use. This preparation, according to the analysis of the state chemists of North Dakota, contained:

Sulphurous acid	0.13 per cent
Sulphuric acid	0.16 per cent
Water to make	100.00 per cent

Following Oxytonic, there was Zymatoid, exploited from Rockford, Ill., and described as an "antiseptic, germicide and antiphlogistic," which had "absolutely no peer in medicine." Analyzed in the A. M. A. Chemical Laboratory, Zymatoid was found to be one more weak solution of sulphur dioxide and sulphuric acid in water!

After Zymatoid had faded from the picture, there came Anti-Phymin, put out, first of all, from Attica, Ind., and later from Pensacola, Fla. It, too, was recommended for practically the whole gamut of human ailments. The A. M. A. Laboratory reported that Anti-Phymin was a dilute solution of sulphurous acid and sulphuric acid in water!

And now Sanovapor. One of the outstanding features of nostrum exploitation is the lack of originality!

1. When sulphur dioxide is dissolved in water, it forms an equilibrium mixture of sulphurous acid and sulphur dioxide. $SO_2 + H_2O \rightleftarrows H_2SO_3$.

The New Physics.—Confidence in the uninterrupted order of law in the course of natural phenomena is based, after all, upon only modest successes achieved by human research in the intellectual coordination of natural events. This confidence has, therefore, no absolute character. Even today many are influenced by a feeling of opposition to the postulate of any unbroken order of laws. It is not easy for us to look upon our acts of will as dependent upon strictly causal sequence and to waive our faith in the spontaneity of our actions. "We can indeed do as we like, but we are compelled to like what we must do" means a bitter pill for proud man. . . . Despite our conviction that practical life cannot get along without the fiction of a free will, the doctrine of uninterrupted causality is in no serious danger of a threat on the part of philosophic psychology. Especially, experiences concerning the action of internal secretions, of hypnosis, and of certain poisons upon psychic reactions, have had the effect of fairly well silencing opposition from that quarter. Today faith in unbroken causality is threatened precisely by those whose path it had illumined as their chief and unrestricted leader at the front, namely, by the representatives of physics.—Einstein, Albert: The Drift of Civilization: A Symposium, New York, Simon and Schuster, Inc., 1929.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

DIABETES AND PREGNANCY — STERILITY

To the Editor:—1. I have a patient with diabetes mellitus, a woman, aged 30, whose blood sugar ranges from 160 to 250 mg. per cubic centimeter with no sugar in the urine at this level. She is on a moderate diet, without insulin. She would like to have a child. Would it be safe for her to go through a confinement if she goes on insulin and keeps the blood sugar within normal limits? 2. Another patient, aged 38, is desirous of having a child. She has been curetted and has been on various glandular preparations. Both she and her husband appear healthy and normal, but no pregnancy has taken place. Please advise what else should be done. Please omit name and address. M.D., Kansas.

ANSWER.—1. A large proportion of women with outspoken diabetes mellitus are sterile and many diabetic women who become pregnant have abortions or premature labor. Formerly true diabetes had an unfavorable effect on pregnant women because a large number of them died. Nowadays many women with diabetes are successfully carried through pregnancy with the aid of insulin, but in some diabetic patients death results in spite of insulin. In the case cited, the patient should be advised to try to become pregnant. If she conceives, a careful control of her urine and blood sugar and the use of insulin if necessary will most likely enable her to go through gestation without any harm.

2. The statement is made that both the patient and her husband appear healthy and normal but tests should be made to make certain of this. First the husband's sperm should be examined. The sperm may be obtained in a small wide-necked jar or bottle or, better still, from the vagina after natural intercourse. If the latter method is chosen, the patient should be instructed to insert a piece of cotton into the vagina after coitus and go to the physician's office immediately so that the examination may be made as soon as possible. The simplest way to secure the sperm from the vagina is by means of a pipet. If the sperm is normal, a careful physical examination should be made of the patient. When making a pelvic examination, one must not omit using a speculum. If cervicitis is present it can be detected more certainly by inspection than by palpation. Not infrequently a cervical infection is the cause of sterility and it is usually easy to cure by means of an electrical cautery. If the sperm is normal and the pelvic examination fails to reveal any abnormalities, a Rubin tubal patency test should be performed. This test is followed by pregnancy in many instances. A curettement for sterility should not be done until it has been shown that the tubes are patent. Glandular preparations except perhaps thyroid are seldom effective in overcoming sterility.

INTOXICATING EFFECT OF ACETYLSALICYLIC ACID AND COCA COLA

To the Editor:—The young people of this community are using from 15 to 20 grains of aspirin dissolved in the well known soft drink Coca Cola as an intoxicating beverage and seem to get a result very closely resembling that from alcoholic beverages. Can you explain the mechanism of the intoxication? Will the continued use result in physical impairment and, if so, what may we expect?

E. L. ROBERTS, M.D., Cissna Park, Ill.

ANSWER.—The effects are due chiefly to central depression caused by the acetylsalicylic acid (aspirin), fortified possibly by a direct central stimulant action of caffeine and other constituents present in Coca Cola. Acetylsalicylic acid is known to exert a more powerful central depression than sodium salicylate because of the presence of the acetyl group. For this reason, acetylsalicylic acid is extensively employed by the laity as an analgesic, in the relief of headache, neuralgia and so on, and as an hypnotic. The actions of this drug are similar to those of small doses of alcohol, or of a weak alcoholic beverage, or of the barbitals or bromides. In definitely effective, but not paralytic, doses the effects are characterized by removal of central nervous inhibition, thus causing loss of self-control, laughter, dreams, abolition of pain and distress, general excitation, increased heart rate, and flushing of the skin; in short, the typical effects of a narcotic drug. Acetylsalicylic acid is not an unpleasant drug to take, and when taken with a beverage like Coca Cola, advertised for its exhilarating effects, which may be caused by a direct central stimulation by caffeine or other constituents, it is easy to see how the effects of one can be fortified by the other. For instance, a function now unopposed, because of the removal of inhibition by acetylsalicylic acid, is driven harder and faster than before.

The continued use of such a medicated beverage can result in undesirable effects, of the same general nature as those of narcotic habituation. These may be manifested by one or more of the following symptoms: nervousness, irritability, apprehension, insomnia, loss of appetite, cardiac irregularity, anemia, loss of body weight, diminished resistance, increased susceptibility to colds and to infections in general; or, in other words, a general impairment of health and character and all that this connotes. There is no doubt of positive dangers from the widespread use of such a medicated beverage, especially among the young. Here is a most insidious evil—the reenforcement of a popular and highly advertised beverage by a well advertised drug, both long suspected of dangerous tendencies. When opiates and cocaine went their way, then came the barbitals. Two states (California and Virginia) have already enacted legislation against the free dispensing and prescribing of these newer narcotics. The indiscriminate or illicit use of acetylsalicylic acid may cause similar restriction.

BURNING OF ROOF OF MOUTH FROM ARTIFICIAL DENTURE

To the Editor:—I have a patient who had two teeth extracted in the upper jaw in front. The permanent bridge was placed two weeks later. In a day or two following this, the patient started with burning in the roof of the mouth, mostly anteriorly, of a severe and annoying character. Many trips to her dentist followed and the two tooth bridge was cut apart without relief of symptoms. She went to another dentist, who blamed the bridge and removed it, with one tooth on each side of the bridge. A rubber denture of four teeth was made covering most of the roof of the mouth, with no amelioration or symptoms. At this time I sent her to a neurologist, who found everything normal and suggested a removal of the denture for such length of time to stop the symptoms, which took one week. The denture was then replaced and symptoms returned the same day. I had the dentist roentgenograph the upper jaw and the surrounding teeth, but nothing pathologic was found. I also had the dentist cut away as much rubber as possible from touching the roof of the mouth, and this brought no results. Salivation was always an annoying symptom and still is. The first teeth were removed two years ago and the other two one year ago. Can you tell me anything that can be done to relieve these symptoms and still give the patient biting surfaces? B. A. BRAUDE, M.D., Johnstown, Pa.

ANSWER.—If a new bridge, which does not press on the gum tissue, can be made for this patient, she should have no further trouble. If she was comfortable after the denture had been out for a week, there appears to be no reason why there should be discomfort from wearing a "fixed" bridge—a bridge permanently attached to the two upper cuspid teeth.

INTERFERENCE WITH PREGNANCY COMPLICATED BY PHLEBITIS

To the Editor:—Mrs. W., aged 39, the mother of three children, the youngest of whom is 6 months of age, developed a phlebitis in both limbs after the last birth, and is not yet back to normal. The general health is fair and the blood picture normal. The patient is now six weeks pregnant and I am inclined to produce an instrumental termination. Would this possibly make a subacute phlebitis acute? Will leaving it alone be the better course? S. L. WEISBROD, M.D., Milford, Mich.

ANSWER.—Since only six months has elapsed from the time of onset of the phlebitis, it may be hazardous to do anything that may stir up the phlebitis. Since the phlebitis was bilateral, the infection must have been fairly extensive. There would be a distinct risk in performing an instrumental abortion at the present time. It is safer to allow the pregnancy to continue to term and have a normal delivery. Even at that time there will be some danger of a recurrence of the phlebitis, but it will probably be far less than instrumental interruption of pregnancy at the present time.

ESTIMATION OF BLOOD UREA — VEHICLES FOR THE DISPENSING OF ACETYLSALICYLIC ACID AND PHENOBARBITAL SOLUBLE

To the Editor:—1. Please give me the technic for estimating blood urea by titration with mercuric chloride and a comparison as to accuracy with a colorimeter method. 2. What is the best vehicle for acetylsalicylic acid? 3. What is the best vehicle for phenobarbital sodium? I dispense quite a bit of these drugs and have trouble getting it into solutions. Kindly omit name. M.D., Georgia.

ANSWER.—1. A paper on "Apparatus for the Determination of the Salivary Urea Index" was described by Hench and Aldrich (THE JOURNAL, April 12, 1924). The same authors published a paper on "Urea Retention: A Simple Method for Its Estimation by the Mercury Combining Power of Blood" (*Arch. Int. Med.* **38**:474 [Oct.] 1926). The principle of the

method described by Hench and Aldrich was employed by Liebig in 1853. Owing to the fact that the method is not strictly accurate, it has been of little use in recent years. Hench and Aldrich have shown, however, that there is a definite parallelism between the figures for the mercury combining power of the blood and the urea and nonprotein nitrogen and point out how figures for urea may be roughly calculated. The LaMotte Chemical Products Company of Baltimore manufacture the Hench and Aldrich blood urea outfit, which has been graduated to read directly the number of milligrams of urea per hundred cubic centimeters of blood. Directions are supplied with the outfit. While this method will probably give reasonably reliable information regarding the level of the blood urea, it is not sufficiently less complicated than quite a number of methods which give accurate figures for the urea nitrogen of the blood to be given preference over these methods. Owing to its greater simplicity in the case of saliva, there would seem to be some reason for its use there.

2. Acetylsalicylic acid should not be dispensed in a vehicle unless it is taken shortly after preparation. In this instance, it may be dissolved in a mixture of alcohol and glycerin. In the presence of moisture, however, it rapidly breaks down to acetic acid and salicylic acid.

3. Phenobarbital soluble (phenobarbital sodium) is not considered stable on keeping in aqueous solution. In case an elixir of phenobarbital is desired, it is suggested that phenobarbital itself be used in a vehicle of alcohol and glycerin.

CEREBRAL HEMORRHAGE AS CAUSE OF INFANT MORTALITY

To the Editor:—What should be recorded as the cause of death of an infant, aged 14 days, born of a primipara, in right occipito-anterior presentation, after a hard twelve hour labor? Pantopon, ⅓ grain (0.02 Gm.), was administered at the first stage, and chloroform anesthesia later. No pituitary was given. After moderate resuscitation of the 9 pound (4,000 Gm.) baby girl, she seemed all right, nursing the breast, taking water, functioning and developing normally. At two weeks suddenly she started a fit of crying and ceased to take anything by mouth. After five hours' crying, she quietly relaxed. There was a tendency to hold the head to the right. The right eyelid was partly open, the left eyelid closed. The pupils remained stationary. There was jerky Cheyne-Stokes breathing. The heart beat was intermittent—now slow and now rapid. One minute periods of cyanosis occurred every hour or so. The temperature by rectum was 99 F. She died in eighteen hours from the onset. The stump, which seemed to have healed, oozed bloody serum during the last six hours. DONALD MCKAY, M.D., Flatonia, Texas.

ANSWER.—The cause of death was most probably cerebral hemorrhage. That the process was a cerebral disturbance is indicated by the tendency to fixation of the head, the suggestion of right facial paresis, nonreacting pupils, and the respiratory and circulatory disturbances. This picture is most often produced by a cerebral hemorrhage, which in this case may be explained by the difficult labor and is supported at least by the oozing from the stump. The factor of trauma is important. There may have been too little hemorrhage to cause death shortly after birth, but continuous oozing might later bring about sufficient accumulation to cause the sudden collapse indicated. The blood was probably deficient in coagulating elements, which is suggested by the oozing from the stump.

TREATMENT OF PERSISTENT URETHRAL DISCHARGE

To the Editor:—I have a case in which early instrumentation and massage of an acutely inflamed prostate seem to have caused a urethral discharge of four years' standing. I have never found any gonococci, and the cellular elements vary from epithelial cells to straight pus and sometimes a number of lymph cells. I have found no tubercle bacilli. The prostate may be slightly enlarged but not nodular; the vesicles are not palpably affected. My irrigations of the bladder with mild antiseptics seem to have provoked a heavier discharge from the urethra. Can you recommend something? Please omit name. M.D., Wisconsin.

ANSWER.—A recurrent urethral discharge quite often is due to a chronic prostatitis and vesiculitis. Overflow of the exudation out of these organs then appears periodically as a urethral discharge. Digital stripping of the organs attached to the urethra often is insufficient in bringing about complete emptying of the prostate and seminal vesicles. By massaging the prostate and vesicles, one can secure satisfactory results. Decided improvement and in numerous cases eventual cure will be brought about by systematic massage combined with medical diathermy of these organs. Each treatment should be followed by instillation into the posterior urethra of an aqueous solution of strong silver protein, from 0.25 to 0.5 per cent in strength. Repeated endodermic injections of some foreign protein have also a salubrious effect.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 3, 1930. Basic Science. Sec., Mr. Louis E. Gebauer, Little Rock, Ark. Eclectic Board, Little Rock, Nov. 11 and 12, 1930. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith, Ark. Regular, Little Rock, Nov. 11-12, 1930. Sec., Dr. Sam J. Albright, Searcy, Ark. Homeopathic, Eureka Springs, Nov. 11, 1930. Sec., Dr. Allison A. Pringle, Eureka Springs, Ark.

CALIFORNIA: San Francisco and Los Angeles, Dec. 10, 1930. Reciprocity examinations. Sec., Dr. C. B. Pinkham, 420 State Office Bldg., Sacramento, Calif.

CONNECTICUT: Regular, Hartford, Nov. 11 and 12, 1930. Sec., Dr. T. P. Murdock, 147 W. Main St., Meriden, Conn. Homeopathic, New Haven, Nov. 10, 1930. Sec., Dr. E. C. M. Hall, 82 Grand Ave., New Haven, Conn.

FLORIDA: Jacksonville, Nov. 10-11, 1930. Sec., Dr. W. M. Rowlett, P. O. Box 603, Tampa, Fla.

KANSAS: Topeka, Dec. 9, 1930. Sec., Dr. A. S. Ross, Sabetha, Kan.

MAINE: Portland, Nov. 11-12, 1930. Sec., Dr. Adam P. Leighton, 192 State St., Portland, Me.

MARYLAND: Regular, Baltimore, Dec. 9-12, 1930. Sec., Dr. H. M. Fitzhugh, 1211 Cathedral St., Baltimore, Md. Homeopathic, Baltimore, Dec. 9, 1930. Sec., Dr. J. S. Garrison, 517 Old Orchard Rd., Ten Hills, Baltimore, Md.

MASSACHUSETTS: Boston, Nov. 12-14, 1930. Sec., Dr. Frank M. Vaughan, 144 State House, Boston, Mass.

NEBRASKA: Lincoln, Nov. 20-22, 1930. Sec., Mr. Ernest M. Pollard, Lincoln, Neb.

NEVADA: Carson City, Nov. 3-5, 1930. Sec., Dr. Edward E. Hamer, Carson City, Nev.

OHIO: Columbus, Dec. 1-4, 1930. Sec., Dr. H. M. Platter, 85 E. Gay St., Columbus, Ohio.

SOUTH CAROLINA: Columbia, Nov. 11, 1930. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia, S. C.

TEXAS: Waco, Nov. 18-20, 1930. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Bldg., Dallas, Texas.

UTAH: Salt Lake City, Dec. 15 and 16, 1930. Dir., Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City, Utah.

VIRGINIA: Richmond, Dec. 9-12, 1930. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke, Va.

WEST VIRGINIA: Morgantown, Nov. 20, 1930. Sec., Dr. W. T. Henshaw, Charleston, W. Va.

WISCONSIN: Milwaukee, Dec. 13, 1930. Basic Science. Sec., Dr. R. N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis.

District of Columbia July Examination

Dr. W. C. Fowler, secretary of the Commission on Licensure of the District of Columbia, reports the written examination held at Washington, July 14-15, 1930. The examination covered 6 subjects and included 60 questions. An average of 75 per cent was required to pass. Fourteen candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Yale University School of Medicine		(1924)	87.1
Georgetown University School of Med.		(1929) 82.3, (1930)	84.5
George Washington University Medical School		(1929)	78.6, 82.7, 84, 85.5, (1930) 85.3
Emory University School of Medicine		(1925)	78
Johns Hopkins University School of Medicine		(1927)	87.4
Harvard University Medical School		(1925)	85
University of Virginia Department of Medicine		(1926)	85, 85.4
Queen's University Faculty of Medicine		(1926)	78.7

Wisconsin June Examination

Dr. Robert E. Flynn, secretary of the Board of Medical Examiners of Wisconsin, reports the written and practical examination held at Milwaukee, June 24-27, 1930. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Seventy-six candidates were examined and passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Loyola University School of Medicine	(1929)	88, (1930)	85
Northwestern University Medical School		(1930)	85, 86
Rush Medical College	(1930)	75, 79, 85, 85, 85, 85,	86, 87
University of Illinois School of Medicine		(1930)	81, 87
Harvard University Medical School		(1929) 85,	86, 86
Washington University School of Medicine		(1929)	89
Columbia University College of Phys. and Surgs.		(1929)	85, 85
University of Oregon Medical School		(1929)	86
University of Pennsylvania School of Med.	(1928)	86, (1929)	87
Marquette University School of Med.	(1930)	78, 80, 80, 80, 81, 81, 82, 82, 82, 82, 83, 83, 83, 84, 84, 84, 85, 85, 85, 86, 86, 86, 86, 86, 86, 86, 87, 87, 88, 89, 89, 89, 90	
University of Wisconsin Med. School.	(1928)	86, (1929) 81, 82, 83, 84, 84, 85, 85, 86, 86, 87, 87, 88, 88, 88, 88, 90, 90	
University of Manitoba Faculty of Medicine		(1916)	84
Leopold Franzens University Faculty of Med., Austria.		(1919)	80

Dr. Flynn also reports 22 physicians licensed through reciprocity with other states and 1 by endorsement of National Board credentials, at the meeting held in Milwaukee, June 24-27, 1930. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1929)	Arkansas
Northwestern Univ. Med. School		(1896) (1907) (1929, 2)	Illinois
Rush Medical College		(1927, 2) (1928, 2) (1930, 2)	Illinois
University of Kansas School of Medicine		(1929)	Kansas
University of Minnesota Medical School		(1929) (1930)	Minnesota
Barnes Medical College		(1906)	Illinois
Jefferson Medical College		(1891)	Illnois
Meharry Medical College		(1928)	Tennessee
Vanderbilt University School of Medicine		(1928)	Tennessee
University of Wisconsin Med. School		(1928) Illinois, (1929)	Nebraska
University of Liverpool Medical School		(1925)	Illinois
University of Budapest Faculty of Medicine		(1916)	New York

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
University of Pennsylvania School of Medicine		(1926)	N. B. M. Ex.

Dr. Flynn reports an additional list of physicians licensed through reciprocity with other states at the meeting, April 8, 1930, held at Milwaukee. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1930)	Illinois
Drake University College of Medicine		(1913)	Iowa
University of Minnesota Medical School		(1925)	Minnesota
Creighton University School of Medicine		(1922)	Nebraska

Virginia June Examination

Dr. J. W. Preston, secretary of the State Board of Medical Examiners of Virginia, reports the written examination held at Richmond, June 17-20, 1930. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. One hundred and eight candidates were examined, 105 of whom passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine		(1929)	82, 86
George Washington University Medical School		(1930)	89
Howard University School of Medicine		(1928) (1930)	76, 79, 77, 79, 79, 81, 81
University of Maryland School of Medicine		(1929)	88
Jefferson Medical College		(1930)	87
University of Pennsylvania School of Medicine		(1929)	83
Medical College of Virginia		(1930)	75, 75, 77, 77, 78, 78, 78, 79, 79, 79, 80, 80, 80, 80, 80, 80, 81, 81, 81, 82, 82, 82, 82, 82, 82, 82, 83, 83, 83, 83, 84, 85, 85, 85, 85, 85, 86, 86, 86, 86, 86, 87, 87, 87, 87, 88, 88, 88, 89, 89, 89, 90, 90
University of Virginia Department of Medicine		(1930)	78, 80, 81, 82, 82, 83, 83, 83, 84, 84, 84, 84, 84, 84, 85, 85, 85, 85, 86, 86, 86, 86, 86, 86, 86, 87, 87, 87, 87, 87, 88, 88, 89, 89, 89, 90, 91

College	FAILED	Year Grad.	Per Cent
Howard University School of Medicine	(1928) 71.6,	(1929)	72
Medical College of Virginia		(1930)	74.1

Dr. Preston also reports 10 physicians licensed through reciprocity with other states and 1 by the endorsement of credentials, at the same meeting at Richmond, June 17-20, 1930. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University Medical School		(1927) (1929)	Dist. Colum. N. Carolina
Howard University School of Medicine		(1925)	Dist. Colum.
University of Georgia Medical Department		(1909)	Georgia
Rush Medical College		(1913)	Illinois
Tulane University of Louisiana School of Medicine		(1917)	N. Carolina
University of Maryland School of Medicine		(1922)	W. Virginia
University of Pennsylvania School of Medicine		(1924)	N. Carolina
University of Tennessee School of Medicine		(1926)	Tennessee
Medical College of Virginia		(1926)	Maryland

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
University of Virginia Department of Medicine		(1888)	U. S. Navy

Nevada May Examination

Dr. Edward E. Hamer, secretary of the Board of Medical Examiners of Nevada, reports the oral and written examination held at Carson City, May 5-7, 1930. The examination covered 10 subjects and included 90 questions. An average of 75 per cent was required to pass. One candidate was examined and passed. The following college was represented:

College	PASSED	Year Grad.	Per Cent
George Washington University Medical School		(1924)	88.3

Book Notices

USEFUL DRUGS: A LIST OF DRUGS SELECTED TO SUPPLY THE DEMAND FOR A LESS EXTENSIVE MATERIA MEDICA WITH A BRIEF DISCUSSION OF THEIR ACTIONS, USES AND DOSAGE. Edited by Robert A. Hatcher, Ph.M., Sc.D., M.D., and Cary Eggleston, M.D. Prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Eighth edition. Cloth. Price, 60 cents. Pp. 176. Chicago: American Medical Association, 1930.

The appearance of a new edition of Useful Drugs is timely in view of the issue between the medical and nonmedical delegates on the floor of the Pharmacopeial Convention in May of this year. In a recent editorial discussing the attack on the physicians' right to apply the doctrine of therapeutic usefulness as a criterion for revision of the Pharmacopeia, THE JOURNAL again urged adherence to Useful Drugs as a safe guide to essential therapeutic preparations selected from the Pharmacopeia, the National Formulary and New and Nonofficial Remedies, stating that the need for such adherence by physicians will be even greater in the future than it has been in the past.

Useful Drugs is prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, the editors of the present volume being Dr. Robert A. Hatcher, a member of the Council, and Dr. Cary Eggleston. It presents a brief and comprehensive discussion of a selected list of drugs and is designed to supply the demand for a less extensive materia medica and therapeutics and for examinations in these subjects by the various licensing boards. The first edition of the book was prepared some fifteen years ago as a result of efforts made by the Council on Medical Education of the American Medical Association and the Confederation of State Examining and Licensing Boards to restrict instruction in materia medica to a fundamental list of drugs with which all medical students and practitioners might be expected to be familiar. Such a list was made and, after various revisions and critical suggestions from many representative members of the medical profession, was published in 1913. Since then the text has gone through several additions and revisions undertaken with a view to the deletion of drugs deemed to have become superfluous and the addition of others the value of which has become established.

Articles newly included in the eighth edition are: amidopyrine, diphtheria toxin for the Schick test, diphtheria toxoid, ephedrine, ephedrine hydrochloride, ephedrine sulphate, liver extract, merbaphen (novasurol) and mersalyl (salyrgan). Articles deleted from the book are: aconite, tincture of aconite, stramonium, and strychnine nitrate. The statements of actions, uses and dosage have been carefully revised to bring them up to date with the latest and best results of therapeutic and pharmacologic research. A copious index is provided.

DIE BEHANDLUNG DER RHEUMATISCHEN KRANKHEITEN. Herausgegeben von Privatdozent Dr. med. Arnold Zimmer. Mit einem Geleitwort von Geh.-Rat Prof. Dr. A. Bier. Paper. Price, 19.50 marks. Pp. 268, with 47 illustrations. Leipzig: Fischers medizinische Buchhandlung, H. Kornfeld, 1930.

The authors of this volume have been associated with the Professor August Bier Klinic in Berlin, and Professor Bier has written the foreword. Apparently the book is based on the experiences of this clinic and the treatment advised is that employed in this clinic. The term "rheumatic disease" is used in a generic sense, covering the various types. The chapter on medical treatment is written by Dr. Bruno Thom. Under the head of general treatment, the use of insulin is advised to increase the appetite of undernourished individuals. Under the head of treatment with specific antirheumatic remedies (and, by the way, the consensus at present is that the salicyl group is not specific in the true sense of the word) a large number of German proprietary preparations are indicated. It is the opinion of the author that in the milder types of acute polyarthritis the salicyl treatment lessens the treatment of cardiac complications. This statement is almost certainly fallacious. As Bier was the father of the passive hyperemic therapy, which he now considers a form of foreign protein therapy, it is not surprising that a chapter is devoted to the use of nonspecific protein or fever therapy. This chapter is written by Zimmer,

The author believes that certain proprietary preparations capable of exciting a fever reaction are more valuable than some simple preparation such as typhoid vaccine. Chapter IV, on the surgical treatment of chronic arthritis, was written by Prof. Wilhelm Baetzner. Chapter V, on the orthopedic treatment of rheumatic disease, was written by Dr. H. Beck. Then follows a chapter on physical therapy by Dr. Ludwig von Pap; a chapter on balneotherapy by Hirsch; a chapter on massage and gymnastics by Kahlrausch; endocrine disturbances and rheumatic disease by Fehlow; technic of the reduction cure by Richter; venereal disease and rheumatism by Richter. Zimmer and Kempf have chapters on the relation of varicosities to arthritis deformans and their treatment. They believe that the varicosities observed frequently in the neighborhood of the affected joint, especially the knee, may be a factor in the discomfort or disability in this disease and advise their treatment by injections. Then follows a chapter on the treatment of gout by von Pap. The final chapter, by Zimmer, is on the interferometric method of Abderhalden's reaction as a diagnostic means in chronic rheumatic disease. This volume contains little, if any, information of value that may be regarded as new in the treatment of rheumatic diseases.

DISEASE AND THE MAN. By George Draper, M.D., Associate Professor of Clinical Medicine, Columbia University. Cloth. Price, $4.50. Pp. 270, with illustrations. New York: Macmillan Company, 1930.

Among the leaders in American medical thought who urge a return to the hippocratic doctrine of viewing the man as a whole is the author of this book. The previous volume on "Human Constitution" appeared some years ago. The present book carries on the studies since that date. Many of the chapters have appeared in medical and biologic periodicals. An introductory chapter is followed by discussions of genetics, morphology, the influence of sex in determining human disease potentiality, the psychologic panel, the constitutional clinic, and the patient and his physician. Each of these chapters emphasizes the main thesis of the work as a whole and several contain illustrative cases indicating the clinical application of the study of constitution. The view that the investigation of disease requires knowledge of heredity, constitution, environment and personality no longer needs argumentative support. The problem of today is to secure application of this conception by general practitioners, specialists, industrial physicians and group practitioners who are crowded for time, insufficiently remunerated and economically incapable of making the type of study that a constitutional clinic demands.

RICERCHE ANATOMO-CLINICHE SU ALCUNE EMOPATIE. Da L. Riccitelli, aiuto e docente. Paper. Pp. 151. Pisa, 1930.

This brochure is made up of four articles concerned with various aspects of hematology. The titles will give an idea of the topics treated. The first article is on the existence of an acute hemocytoblastic aleukemic syndrome as an anatomic and clinical entity. The second treats of splenomegalic pernicious anemia and its relations with the ordinary pernicious anemia and with the splenomegalic hemolytic anemias. The third has to do with the relations between the agranulocytosis of Schultz and other abnormal blood conditions. The last is entitled the problem of the neuro-anemic syndromes.

INTERN'S HANDBOOK: A GUIDE TO RATIONAL DRUG THERAPY, CLINICAL PROCEDURES AND DIETS. By Members of the Faculty of the College of Medicine, Syracuse University. Under the direction of M. S. Dooley, A.B., M.D., Chairman, Publication Committee. Cloth. Price, $3. Pp. 254. Philadelphia: J. B. Lippincott Company, 1929.

This book has been prepared by members of the faculty of Syracuse University with a view to encouraging the proper use of drugs by interns and with a view to providing the intern with a ready reference to the subjects which he might be called to know in an emergency. The list of drugs is essentially a list of useful drugs somewhat more abbreviated than that which appears in the volume prepared under the auspices of the Council on Pharmacy and Chemistry. Following the list of drugs is a section on the treatment of poisoning and a section on such essentials of clinical pathology as might occupy the attention of the intern in the average general hospital. The rules governing roentgenology are planned to aid the intern with his work in that department. The section on diagnosis consists essentially of outlines of the most used procedures. There are also sections on diets, on serums and vaccines, on obstetrics, and on other specialistic procedures. The book has a good index and there are plenty of blank pages for important notes.

NEUE DEUTSCHE KLINIK: Handwörterbuch der praktischen Medizin mit besonderer Berücksichtigung der inneren Medizin, der Kinderheilkunde und ihrer Grenzgebiete. Herausgegeben von Prof. Dr. Georg Klemperer und Prof. Dr. Felix Klemperer. Band III: Echinokokkenkrankheit—Gelenkerkrankungen (chronische). Cloth. Price, 40 marks. Pp. 805, with 235 illustrations. Berlin: Urban & Schwarzenberg, 1929.

The third volume of this new encyclopedia of medical practice is essentially a collection of thirty-six monographs covering such subjects as eclampsia, eczema, electrical diagnosis and treatment, inflammation, enuresis, epilepsy, vomiting, the catching of cold, ferments, fevers, obesity, fractures, hospitals, furuncles, gallstones, obstetrics, brain abscess and tumors, psychiatry, and yellow fever. The German names for those conditions make the titles range from echinococcus diseases to disturbances of the joints (Gelenkerkrankungen). Like the previous two volumes, this book is printed entirely on coated stock. It is superbly illustrated. The articles are sufficiently long to cover every important fact of the subjects considered and they are quite up to date. Practically all of them are written by German authors who have achieved importance in the fields concerned. Thus, those dealing with pathology are by Gerlach, director of the pathologic institute at Halle; the article on encephalitis is by von Economo, who is credited with having made the first modern identification of this subject in 1916; the subject of fractures is illustrated with more than a hundred plates, showing the fractures under the x-rays and the various devices used in treatment. One of the most valuable articles in the book is that on the deformities of the feet and ankles by Stracher. Each of the articles is complete with bibliographic notes, many of them referring to literature as recent as 1927 and 1928. By typographic display, important points are fully emphasized. This encyclopedia goes so far beyond any available similar work in English that comparison is impossible.

CARE OF AGED PERSONS IN THE UNITED STATES. Bulletin of the United States Bureau of Labor Statistics, No. 489. Paper. Price, 70 cents. Pp. 305, with 40 illustrations. Washington, D. C.: Supt of Doc., Government Printing Office, 1929.

This volume provides a complete survey of the care of the aged by federal, state and local governments, by fraternal, labor, religious and private organizations, by employers and by special funds. There are 1,270 homes for the aged in this country and data have been obtained for 1,037. They care for approximately 70,000 people. About 85,000 people are cared for in almshouses. The data are invaluable to any one interested in the subject. They cover diets, furnishings, costs, systems of support, insurance and medical care.

PRAXIS UND THEORIE DER INDIVIDUALPSYCHOLOGIE: VORTRÄGE ZUR EINFÜHRUNG IN DIE PSYCHOTHERAPIE FÜR ÄRZTE, PSYCHOLOGEN UND LEHRER. Von Dr. Alfred Adler. Fourth edition. Paper. Price, 12.80 marks. Pp. 245. Munich: J. F. Bergmann, 1930.

Dr. Alfred Adler of Vienna presents in his book on individual psychology a series of lectures or discussions intended to be an introduction to psychotherapy particularly of interest to physicians, psychologists and teachers. He elucidates his well known and interesting conceptions as to the development of the neurotic and the psychotic individual, explains the attitude of the neurotic person toward life and society, gives an understanding of the goal or aim of these individuals and thereby affords a better insight into the prevention and treatment of these modes of individual reaction. Adler explains the strivings for superiority of neurotic individuals, the masculine protest, the extreme egotism and excessive ambition at the basis of the neurotic character, which is associated with a feeling of inferiority and inadequacy and which interferes with the purposeful activity of the individual and his adjustment to his surroundings. On the basis of his conceptions of the struggle for power and superiority, Adler explains various neuroses, perversions, melancholias, paranoias, and delinquencies in childhood and adolescence. The author attempts to elucidate the attitude and mode of development of the social and antisocial traits exhibited by these persons. He believes that they frequently originate in early childhood.

He emphasizes the necessity of encouraging and developing a social feeling (*gemeinschaftsgefühl*). He thinks that if the neurotic and the maladjusted child could be taught how to cooperate with his fellows the behavior difficulties would be adjusted. In order to achieve this goal, cooperation between parents, teachers and the affected children is necessary. Adler does not see as much in the influence of sex development on the mental habits and behavior as his distinguished teacher Freud. Indeed, Adler declares that he is at variance with Freud on this point and he believes that Freud overemphasizes the sex component in the psychic manifestations. The author stresses the need for prophylaxis, which he thinks will be best advanced by education of parents, physician and teachers in an understanding of the principles of modern individual psychology. He considers that the school offers the most promising possibilities for the control of the problem child. By this he implies that the parents have already failed. In order to achieve results it is important that physician, teacher and parent should cooperate and direct the child in the right directions to prevent maladjustments and teach him that to be normal spells willing and cheerful cooperation. Individual psychology attracts by its simplicity and its content of practical common sense. It offers a working hypothesis for the recognition and possibly the correction of some of the commoner behavior disorders. It attempts to explain to a degree the origin of the mental twists and unpleasant peculiarities of children as well as adults in every rank of society. Because of its practical uses and its application to everyday life, individual psychology has exerted a great influence on modern thought in the practice of medicine, pedagogy and psychology. It is not a complete and comprehensive system. It fails to explain to complete satisfaction origins, course and progress of many of these psychic deviations. Adler does not seem to take into account the influence of heredity, though he does speak of constitutional and physical deficiency as the basis of psychic inferiority. Individual psychology represents the thoughts and concepts of Alfred Adler. As such it is probably not all embracing or all enduring. Nevertheless he has founded a school and has succeeded in attracting ardent adherents in every part of the world as well as securing the marked attention of thoughtful persons in pedogogy, educational psychology and medicine.

THE DIETARY OF HEALTH AND DISEASE FOR THE USE OF DIETITIANS, NURSES AND INSTRUCTORS IN THE SCIENCES THAT PERTAIN TO NUTRITION. By Gertrude I. Thomas, Instructor in Dietetics, University of Minnesota. Second edition. Cloth. Price, $2.50 net. Pp. 276, with 5 illustrations. Philadelphia: Lea & Febiger, 1930.

This is offered as a textbook for schools of nursing and of home economics. The book is compiled from a dozen larger books and from the periodical literature. It seems to include just about all that those for whom it is intended should and can assimilate. It is concerned largely with tables of food values, recipes, special diets and similar subjects. It is fairly well organized but the addition of new material in the second edition has disturbed the organization. Thus the ketogenic diet is covered on pages 180-183 and again under epilepsy on page 257, where it is called the Peterman diet and quoted in full from his article in THE JOURNAL but not referred to under ketogenic diet in the index.

ULTRA-VIOLET RADIATIONS AND THEIR USES. By Robert Aitken, M.D., F.K.C.P.E., Lecturer on Diseases of the Skin, Edinburgh University. With a foreword by Sir Norman Walker. Cloth. Price, 10/6 net. Pp. 208, with 15 illustrations. Edinburgh: Oliver & Boyd, 1930.

This book completely covers the subject of ultraviolet radiation. In it the author briefly reviews the physics of light and its biologic effects. The rôle of the layers of the skin in the transmission of light, the changes produced in the blood stream, and the pathologic effects of ultraviolet radiation are clearly and lucidly stated. In the chapter dealing with apparatus the author differentiates between the carbon and the mercury arc, evaluates the energy derived from these sources, and states the indications for its use. A goodly portion of the book is devoted to technic. Here the author discusses the use of dosimeters and the significance of erythema and explodes the theory that ultraviolet radiation is contraindicated in pulmonary tuberculosis and in acute ailments in infants and in the aged. The major portion of the book is devoted to the treatment of various diseases all anatomically classified. The author cites not only his own experiences but those of his co-workers in the field of actinotherapy. An excellent bibliography is included. The book is systematic and thorough and should be useful both to students and to practitioners.

GROWING UP IN NEW GUINEA. A Comparative Study of Primitive Education. By Margaret Mead, Assistant Curator of Ethnology, American Museum of Natural History. Cloth. Price, $3.50. Pp. 372, with illustrations. New York: William Morrow & Company, 1930.

The author, as shown in her book "Coming of Age in Samoa," has the peculiar faculty of telling anthropologic and ethnologic facts in a way to interest the general reader. The group that she discusses in this book has a character different from that of most other groups of human beings; its tabus differ from those of most other peoples. The children are reared by a method that gives them independence early in life, and a responsibility for their acts that might well suggest methods to educational psychologists of more civilized communities. The sex life has a particular form of restraint somewhat like the puritanical concepts of the Victorian Age and of America previous to 1900. The manner in which this sex life inhibits character development is detailed by the author. There are eleven appendixes to the book giving specimens of the method of study and of the development of the Manus people. Miss Mead is convinced that imitation is the most powerful teacher, much more powerful than any adult technic, and she is inclined to deprecate the power of education to overcome biologic traits in human life. It makes no difference what one teaches in the school provided adults at home and away from home established other methods of conduct.

GUIDE TO THE SURGICAL INSTRUMENTS AND OBJECTS IN THE HISTORICAL SERIES WITH THEIR HISTORY AND DEVELOPMENT. By C. J. S. Thompson, M.B.E., Hon. Curator of the Historical Section of the Museum. With a foreword by the Conservator, Sir Arthur Keith, M.D., F.R.C.S., F.R.S. Boards. Pp. 92, with illustrations. London: Royal College of Surgeons of England, 1929.

The author is best known for two excellent books on the history of poisons and of quacks. As curator of the museum of the Royal College of Surgeons he has studied the history of medical technic. His guide is a history of the development of medical accessories and apparatus including the scalpel, the tourniquet, the forceps, the stethoscope, the thermometer and what not. The book also describes faithfully the anatomic preparations in the museum, Lister's instruments, the hands of several famous surgeons, and innumerable other objects of interest. For those who have visited the museum it is a memento of great value; others who read the little guide will impatiently await their first visit.

A TEXTBOOK OF THE PRACTICE OF MEDICINE. By Various Authors. Edited by Frederick W. Price, M.D., F.R.S., Consulting Physician to the Royal Northern Hospital. Third edition. Cloth. Price, $11.50. Pp. 1871, with illustrations. New York: Oxford University Press, 1929.

Since the first edition of this book, which appeared in September, 1922, there have been five reprintings of that edition and two of the second. Obviously it must have had an excellent sale. The third edition has been thoroughly revised. Many new articles have been added covering such subjects as vitamins, glandular disorders, electrocardiographic studies, and several unusual diseases of which much has been written in recent years. Following the announcement of new discoveries, changes in classification have been made. Yellow fever, phlebotomus fever and dengue have been moved from the section on spirochetal infections to that on infectious diseases of unknown etiology. Rickets is now classified as a deficiency disease. There have been complete rewritings and additions to articles on encephalitis, scarlet fever, malaria, syphilis and hyperthyroidism. This volume, to which many authors have contributed, is a good representative of modern clinical practice in the British Isles. Twenty-six leading practitioners are listed as contributors. Beginning with a general article on fever, infection and immunity, it covers immunotherapy, then various infections, tropical diseases, parasitic disorders, chemical and physical disturbances, metabolic disorders, and glandular, digestive and circulatory disturbances. Then come diseases affecting various systems and finally psychologic medicine. Unfortunately, the book is poorly printed, on poor paper with

occasional smudging of type. The letters are small and the printing shows through the thin stock. In general the articles are of a high order. They are well written, systematic, easily followed and quite up to date. The therapy is simple, and the volume does not seem to have been written primarily to promote unestablished proprietaries, as has been the case with many other foreign systems. The general practitioner will find this one of the best ready reference books he can have at hand.

MEDIZINISCHE ANTHROPOLOGIE: EINE WISSENSCHAFTSTHEORETISCHE GRUNDLEGUNG DER MEDIZIN. Von Dr. Oswald Schwarz, Privatdozent an der Universität Wien. Paper. Price, 13 marks. Pp. 383. Leipzig: S. Hirzel, 1929.

It should no doubt have been realized from the first that it is impossible to separate the science of medicine from all other sciences that deal with the structure, the life and the birth of man. Lately, however, it is being realized more and more that anthropology is one of the most fundamental of sciences with which medicine must be concerned. Schwarz has therefore prepared an outline of anthropology directed primarily to the physician rather than to the public. He begins by showing the relationship of medicine to other sciences. After discussing the diseases of man and the responsibility of man for carrying on human culture, he turns to the position of anthropology in the system of knowledge, the fundamental aspects of anthropology in relation to medicine, and the present tendencies of thought in the medicine of today. He recognizes the fact that medicine is turning more and more to the study of personality and of the individual rather than of mankind. He lists Bauer, the pathologist, Krehl and Freud as some of the greatest leaders in this modern movement. Indeed, he is inclined to call Freud the most advanced of all the modern leaders who are concerned with the progress of modern medicine.

DISEASES OF WOMEN. By Ten Teachers under the direction of Comyns Berkeley, M.A., M.D., M.C., Obstetric and Gynæcological Surgeon to the Middlesex Hospital. Edited by Comyns Berkeley, H. Russell Andrews and J. S. Fairbairn. Fourth edition. Cloth. Price, $6 net. Pp. 558, with 184 illustrations. New York: William Wood & Company, 1930.

This edition shows considerable revision and improvement. Like previous editions, it is a collective effort of ten of the leading gynecologists of England. It is simply and tersely written, is well illustrated, and should be a valuable work for students in gynecology, including as it does a complete section on the principles of technic of gynecologic surgery. The chapters on ectopic pregnancy are well written and the work includes an excellent and important chapter on chronic ill health in women from the psychologic standpoint: neurasthenia in relation to pelvic disorders, a subject that American textbooks might do well to include. The American gynecologist will be surprised by the liberal use recommended for the uterine sound, the recommended methods of examination of discharges, the fact that general anesthesia is recommended for the Rubin patency test, and the absence of any mention of the cautery treatment of endocervicitis. Devoting a chapter each to acute and chronic endometritis is distinctly at variance with American teaching. However, the pleasing and informal style in which the entire book is written, together with the fact that it presents an accurate picture of British gynecology of today, should make this volume a desirable addition to the gynecologist's library.

DIE ARTEN DER SCHLAGANFÄLLE DES GEHIRNS UND IHRE ENTSTEHUNG. Von Dr. Ph. Schwartz, a. o. Professor an der Universität, Frankfurt a. M. Paper. Price, 48 marks. Pp. 269, with 150 illustrations. Berlin: Julius Springer, 1930.

A consideration of apoplexies in general based on the study of a large series of cases has long been needed to confirm or disprove many of the current theories of the mechanisms of the various types of cerebral vascular accidents. Schwartz has studied hundreds of cases and in his book illustrates his results graphically by means of many beautiful photographs. He considers the macroscopic and microscopic observations in hemorrhage associated with hypertension, in softening associated with arteriosclerosis, and in embolism. He has a complete discussion of the pathogenesis of these various types, comparing and contrasting them in great detail. His conclusions are based on a thorough study and should be read in original detail by all interested in cerebral vascular diseases.

Medicolegal

Mental Capacity Determinable by Physical Condition

(Love v. Love (Md.), 148 Atl. 814)

Margaret Love died, Nov. 2, 1928, aged nearly 96. Certain of her grandchildren who had received no recognition under the will contested it. Verdict and judgment were given in their favor on the issues of testamentary capacity and undue influence. The executor then appealed to the Court of Appeals of Maryland.

Dr. Taylor, who attended the testatrix, testified that she was incompetent to make a valid deed or contract on the day she executed the will. Under the well settled rule in Maryland, said the Court of Appeals, he was competent to express an opinion as to the mental capacity of his patient without giving any reasons for his opinion. On behalf of the executor, however, it was contended that Dr. Taylor disqualified himself, after expressing his opinion, by stating that that opinion was based on the physical condition of the testatrix; that he was unable to say whether she had sufficient mental capacity to make a gift; that there was nothing unusual or abnormal about her mental condition, except that she was a failing old lady; that he observed nothing to produce her condition of senile decay, except that she was feeble and failing in health; and that he was unable to say when, in a person suffering from arteriosclerosis, as he testified the testatrix was, the disease would interfere with the blood supply of the brain and lessen its functioning.

The question, said the Court of Appeals, is whether the discussion, on cross-examination, of the ground of the witness' opinion showed that opinion to be so lacking in foundation that it must be stricken from the record, on the motion of the executor, notwithstanding that it was properly admitted. The court held that it was not necessary to strike the opinion from the record. The opinion of the witness, said the court, was undoubtedly weakened, but we cannot say that it was nullified. The weight of it was for the jury to determine. So far as we know, said the court, it has never been held that physical deterioration may not reach a point where the brain ceases to function, although there may not be any specific mental disease. The rulings of the court below were therefore affirmed, and the case remanded.

Parke J., however, dissented. The only witness, he said, who expressed an opinion that the testatrix was incompetent when she made the will was the family physician, whose opinion was shown by his testimony in chief and by his cross-examination not to have been based on any evidence of mental incapacity, and consequently to be without probative force.

Estoppel of Patient to Deny Liability for Services

(Dempsey v. Angelette (La.), 125 So. 887)

The wife of the defendant, Angelette, became ill, and he employed the plaintiff, Dr. Dempsey, to treat her. Dr. Dempsey had treated Angelette and his family for a number of years. The patient did not respond to treatment, and in the early part of January, 1927, Angelette requested Dr. Dempsey to obtain the services of another physician. As the patient was suffering from nausea and vomiting, a stomach specialist was called in. According to the testimony of Angelette and his wife, when they suggested a consultant be summoned, they considered that Dr. Dempsey had given up the case. Nevertheless, after a consultation between Dr. Dempsey and the consultant, the patient was removed to the Touro Infirmary. She remained at the infirmary from January 1 until discharged, January 18, the stomach specialist having decided that the patient was suffering, not from stomach trouble, but from a goiter.

Dr. Dempsey, according to his testimony, continued to render services to the patient while she was in the hospital and thereafter, and later, on Angelette's request, he called in another consultant. This consultant recommended a surgeon who specialized in operations for goiter. The patient was again admit-

ted to the Touro Infirmary, March 18, and after an operation by the surgeon selected was discharged, April 8.

Dr. Dempsey thereafter sued Angelette for $205, claimed as compensation for professional services rendered between Jan 2, 1927, the day after the patient was first taken to the Touro Infirmary, and April 9, 1927, the day following her discharge from the infirmary after she had been operated on. Angelette admitted an indebtedness of $60 but denied liability for the remaining $145. Judgment was rendered in favor of Dr. Dempsey, and Angelette appealed to the Court of Appeal of Louisiana, Orleans.

Angelette and his wife both denied that Dr. Dempsey had treated Mrs. Angelette during the period when she was in the Touro Infirmary. Angelette contended that Dr. Dempsey did not call regularly at the hospital to visit Mrs. Angelette and that when he did call, he, Angelette, was under the impression that it was merely a friendly visit. During both periods when the patient was in the infirmary, the specialist directed and administered all of the treatment that the patient received. Angelette contended, therefore, that he was not responsible to Dr. Dempsey for any visits he made; he considered that Dr. Dempsey turned the case over to the specialist on both occasions. Both the defendant and his wife admitted that they did not discharge Dr. Dempsey. Two physicians testified on behalf of Dr. Dempsey. One testified that it was the custom for the family physician to continue his services unless discharged. The other one testified that it was the custom for the family physician to continue his services if the family requested him to do so.

It appears, said the Court of Appeal, that the defendant did continue his services. While he may not have been solely in charge of the case, he cooperated with the specialists in treating the patient. Angelette, the defendant, at no time objected to Dr. Dempsey rendering such service. If he considered that Dr. Dempsey was no longer in the case, Angelette should have so informed him. It was too late to complain, said the court, after Angelette had received the benefit of Dr. Dempsey's services. The judgment of the trial court for the full amount, in favor of Dr. Dempsey, was affirmed.

Evidence: Dying Declarations.—Before a dying declaration can be admitted in evidence, the trial judge must be satisfied beyond a reasonable doubt that it was made under the realization and solemn sense of impending death. The declaration must be the utterance of a sane mind. It must be restricted to the homicide and the circumstances immediately attending it and forming a part of the res gestae. A declaration, or part of it, is not admissible unless it would be competent and relevant if it were the testimony of a living witness. Great caution should be observed in the admission of dying declarations, and the rules which restrict their admission should be carefully guarded. In this case it was shown that the declarant was of sound mind, that she realized what she was saying, that she had been dangerously wounded internally and that an operation had been performed, and that she did not evince the slightest hope of recovery. When she was making a statement concerning the circumstances under which she was wounded, she said: "I am going to die; I cannot get well; you need not worry about me." About twenty-four hours later, she died. Her dying declaration was held to have been properly admitted as evidence.—*Walton v. State (Miss.), 126 So. 29.*

Practice of Dentistry: Revocation of Licenses.—The Florida statute regulating the practice of dentistry (Acts of 1925, chapter 10109, sec. 18; C. G. L., 1927, sec. 3551) is penal in its nature. It must therefore be strictly construed and strictly followed. The statute authorizes the state board of dental examiners to revoke the license of any dentist shown to have been employing unlicensed persons to perform work which can lawfully be done only by persons licensed to practice dentistry in Florida. There is no provision in the statute for review by appeal or writ of error of the action of the state board of dental examiners revoking licenses, but in such cases, said the Supreme Court of Florida, Division B, it is well settled that mandamus will lie to consider the whole proceeding, wherein it may be determined by the court whether the action of the board will be sustained or the dentist restored to his right to practice dentistry. On a motion for a peremptory writ of mandamus, the court held that an accusation charging a licensed dentist with having violated the dental law of the state, by employing an unlicensed person and allowing that person to practice dentistry in his office, failed to charge the dentist with having committed any act which under the provisions of the statute constituted grounds for the revocation of his license to practice dentistry. The most the evidence showed was that a person not licensed to practice dentistry had on two occasions performed, in the office of the dentist whose license had been revoked, some service which could lawfully be done only by a person licensed to practice dentistry, but there was no evidence that the dentist in whose office he had performed such service had employed him or that he had directed the unlicensed person to perform the work. The board was without authority to consider and act on charges other than those contained in the accusation served. A peremptory writ of mandamus was issued.—*State ex rel. Jordan v. Pattishall et al., State Board of Dental Examiners (Fla.), 126 So. 147.*

Workmen's Compensation Acts: Compensability for Death by Lightning.—It is the settled law in Minnesota that the death of an employee caused by lightning is compensable only when by reason of employment he is so exposed to injury by lightning as necessarily to accentuate the natural hazard and when the accident is incident to his employment. The employment must expose the employee to the hazard in some way peculiar to it, so that he does not stand in relation to the hazard in only the same way as the public generally. The Industrial Commission, and later the Supreme Court of Minnesota, was asked to take judicial notice of statements by an expert on the phenomena of electricity and lightning, concerning the relative chances of objects at different heights being struck, and it was insisted that the chance of the deceased workman being struck was enhanced by the fact that he was with large horses on the highway, with no other large objects above the ground.

We may take judicial notice, said the Supreme Court of Minnesota, of that which may be regarded as common knowledge of every person of ordinary intelligence; that is, of that which is or ought to be generally known. We do not take judicial notice of things which are not of common and general understanding. We may take judicial notice of scientific facts which universal experience has rendered axiomatic; that is, generally recognized scientific facts. The doctrine should be extended, where it may reasonably be accepted, rather than restricted; yet we cannot take judicial notice of such facts as are known, if at all, only by a specially informed class of persons. We may take notice of the use of lightning rods and that they are to some extent effectual within their immediate area, but to go to the extent now asked would take us into the field known only, if at all, to the scientist and the technician. The rule does not permit that. The Industrial Commission properly rejected the application of the doctrine of judicial notice in this case.—*Lickfett v. Jorgenson et al. (Minn.), 229 N. W. 138.*

Society Proceedings

COMING MEETINGS

American Academy of Physical Therapy, Boston, November 12-14. Dr. Thomas L. Smyth, 111 North Eighth Street, Allentown, Pa., Secretary.

American Association of Railway Surgeons, Chicago, November 5-7. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

Central States Pediatric Society, Memphis, Tenn., November 7-8. Dr. A. H. Parmelee, 310 South Michigan Boulevard, Chicago, Secretary.

Medical and Surgical Association of the Southwest, El Paso, Texas, November 6-8. Dr. W. Warner Watkins, Box 1587, Phoenix, Ariz., Secretary.

Radiological Society of North America, Los Angeles, December 1-5. Dr. I. S. Trostler, 25 East Washington Street, Chicago, Secretary.

Southern Medical Association, Louisville, Ky., November 11-14. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.

Southern Surgical Association, Lexington, Ky., December 9-12. Dr. Robert L. Payne, 142 York Street, Norfolk, Va., Secretary.

Western Surgical Association, Kansas City, Mo., December 5-6. Dr. Frank R. Teachenor, 306 E. Twelfth St., Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

40: 465-704 (Sept.) 1930

*Metabolism Studies in Nephrosis: Relationship of Protein Intake to Nitrogen Retention, Edema and Albuminuria. D. M. Cowie, K. M. Jarvis and M. Cooperstock, Ann Arbor, Mich.—p. 465.
*Heliotherapy and Peripheral Blood. G. Hoeffel and D. Lyons, Boston. —p. 484.
*Diagnostic Value of Sodium Fluorescein in Epidemic Cerebrospinal Meningitis. B. E. Bonar, Salt Lake City, and L. G. Bailey, Millwood, Wash.—p. 493.
*Acute Suppurative Thyroiditis in Children: Operative Recovery. J. M. Mora, Chicago.—p. 500.
New Infant Feeding Chart. R. W. Teed, Owosso, Mich.—p. 503.
*Differential White Count in Infancy: Comparison by Supravital and Fixed Smear Methods. C. H. Smith, New York.—p. 505.
*Sepsis with Leukopenia (Agranulocytosis) in Children: Ten Cases. J. A. Bigler and J. Brennemann, Chicago.—p. 515.
Preparation of Dextrose for Parenteral Injection. F. F. Schwentker, Baltimore.—p. 533.
*Problem of Dental Caries. R. W. Bunting, F. P. Hadley, P. Jay and D. G. Hard, Ann Arbor, Mich.—p. 536.
*Diffusible Blood Serum Calcium in Normal New-Born Infants. H. H. Ray and N. M. Phatak, San Francisco.—p. 549.
*Pneumonia in Children. N. Plummer, A. Raia and S. Shultz, New York. —p. 557.
*Nitrite Reaction as Diagnostic Test in Influenzal Meningitis. R. M. Greenthal, Milwaukee.—p. 569.
Congenital Atresia of Bile Ducts: Case. A. Matheson and I. H. Tumpeer, Chicago.—p. 571.
*Infectious Mononucleosis. J. P. Price, Florence, S. C.—p. 581.
Gonorrheal Rhinitis. R. T. Miller, Boston.—p. 588.
Psychiatric Aspects of Enuresis. F. N. Anderson, Los Angeles.—p. 591.
William Heberden the Elder, 1710-1801. J. Ruhräh, Baltimore.—p. 619.

Relation of Protein Intake to Nitrogen Retention and Albuminuria in Nephrosis.—A case of chronic glomerular nephritis in a child whose condition, under observation, passed into the so-called nephrotic subgroup of glomerular nephritis is presented by Cowie et al. These studies demonstrate that, in this case of nephrosis in a child characterized by a high metabolic rate, a protein intake sufficient to induce a positive nitrogen balance of from 1 to 3.76 Gm. was necessary and sufficient to keep the patient edema-free. This amount of protein caused a marked diminution of the urinary albumin but it did not cause the albumin to disappear after a continuous edema-free period of eleven months. A blood protein content of 5 Gm. was necessary before the patient became permanently edema-free. At one time the patient was edema-free when the serum protein was 3.8 per cent. In studies of nitrogen balance the actual chemical estimation of the nitrogen in the stool is shown to be necessary.

Heliotherapy and Peripheral Blood.—Hoeffel and Lyons are of the opinion that there is no justification for the belief that light rays, considered either collectively as including the entire spectrum or individually as ultraviolet rays, have any specific effect on the blood. The effect of light on the healing of a pathologic process, such as tuberculosis, cannot be distinguished from that exerted by other factors the beneficial influences of which are well recognized.

Diagnostic Value of Sodium Fluorescein in Epidemic Meningitis.—A study of the value of sodium fluorescein as a diagnostic agent in epidemic cerebrospinal meningitis is presented by Bonar and Bailey with observations in thirty-three examinations in twenty-one cases. Ingested or injected sodium fluorescein permeated the meningeal barrier in all but two uncured patients with clinically and bacteriologically diagnosed epidemic cerebrospinal meningitis. A probable explanation for the failure of the test in these two patients is proffered. The test is of value in the differentiation of epidemic cerebrospinal meningitis from other diseases in which sometimes there are manifestations of meningeal irritation, such as pneumonia, erysipelas, spasmophilia, encephalitis, tumor of the brain and tetanus. The presence of small amounts of blood does not invalidate the test, which makes it especially valuable in the diagnosis of meningitis.

Acute Suppurative Thyroiditis in Children.—Two cases of acute suppurative thyroiditis in children, aged 2½ and 13 years, with operative recovery, are recorded by Mora. In both cases the primary infection was a sore throat, and in both instances the offending organism was a hemolytic streptococcus.

Differential White Count in Infancy.—The differential blood count of thirty-seven normal and sick infants was studied by Smith from a supravital preparation and from fixed smears, and the observations were correlated. In forty-three of forty-eight comparative smears, the percentage of polymorphonuclear leukocytes was higher, and that of lymphocytes was lower in the living preparation than in the fixed film. The average of twenty-four counts from the group of normal infants showed the proportion of polymorphonuclear neutrophils to be 8.6 per cent higher in the supravital than in the fixed cover-slip smear and almost 12 per cent higher than in the slide. The lymphocytes, on the other hand, ran 14 per cent and 11 per cent higher in the fixed smear of the slide and cover-slip, respectively, than the corresponding cells of the supravital preparation. The principal reasons for this discrepancy are unequal distribution of the cells and, especially, failure to identify and include all fragmented polymorphonuclear leukocytes in the differential count of the fixed smear. With the supravital technic, the spread of cells is more even, trauma is reduced, and both motile and dying cells may be more readily identified. In pyogenic infections, especially when associated with a leukocytosis, the differential count from the fixed smears gives at times a much lower polymorphonuclear and a higher lymphocyte percentage than expected. That this discrepancy is often due to an increased fragility of the polymorphonuclear leukocytes is evident from comparative supravital studies. In a routine differential count from the fixed smear, particularly when it is employed as an index of the patient's resistance, the extent of white cell damage encountered on the slide should be noted. If fragmented cells have been included in determining the individual cell percentages, mention of this fact should also be made.

Sepsis with Leukopenia in Children.—Ten cases of the clinical syndrome of a sepsis, with severe anemia, thrombopenia and agranulocytic leukopenia are reported by Bigler and Brennemann. Their relationship to aleukemic leukemia, aplastic anemia, agranulocytic angina and other conditions is discussed.

Problem of Dental Caries.—Evidence is given by Bunting et al. in support of the view that dental caries is a specific infective process the activity of which is dependent on certain metabolic states. As the result of dietary and therapeutic experiments, active dental caries was reduced to a negligible quantity in 433 children. Of the methods employed, dietary measures appeared to be the most important. The diets prescribed for the control of dental caries were well balanced, well fortified, adequate rations in which sugar was reduced to the minimum.

Diffusible Blood Serum Calcium in New-Born Infants.—Studies of calcium partition in the blood serum of fifty newborn infants, ranging from 5 to 22 days in age, are reported by Ray and Phatak, together with determinations of the serum inorganic phosphates, chlorides and protein fractions and the whole blood cholesterol. The total serum calcium, as determined in thirty-two cases, averaged 11.4 mg. per hundred cubic centimeters of serum. The average diffusible serum calcium, as estimated in forty-two determinations, was 5.3 mg., or 46.7 per cent. The nondiffusible calcium averaged 6.2 mg., or 53.6 per cent, in thirty-one determinations. No significant statistical correlation could be found between the total or diffusible calcium and the inorganic phosphates, protein fractions, chlorides or cholesterol. A chart is presented showing the frequency distribution of the total calcium, the diffusible calcium in the serum and the diffusible calcium in the filtrate. It is suggested that studies of calcium partition are of definite use in the interpretation of any clinical condition involving calcium disturbance.

Pneumonia in Children.—The cases of 147 patients with pneumonia admitted to the children's medical division of Bellevue Hospital from Nov. 1, 1928, to April 30, 1929, were studied clinically and bacteriologically by Plummer et al. A control series of 161 children was studied at the same time and by the same bacteriologic methods. The accuracy of the throat swab method of typing is shown by a series of thirty-seven cases in which cultures were obtained from the sputum, blood, ear exudate, chest fluid or specimens procured by postmortem puncture of the lung or at autopsy. The unclassified group in the 147 cases of pneumonia was reduced from 81.6 to 49.7 per cent by the separation of the ten new types of Cooper, Edwards and Rosenstein. The incidence of types in the 147 cases of pneumonia in children is tabulated. The incidence of types in the 161 control children, seventy-two of whom had respiratory infections but not pneumonia, is tabulated; 73 per cent had pneumococci in the throat; 29 per cent had one of the fixed types, and 44 per cent had unclassified strains. The incidence of types according to age is recorded. The incidence of pneumonia in general is high in the first year and drops rapidly after that. A higher incidence of the fixed types was found after the first year. The cases are classified according to clinical diagnosis. There was a predominance of types I, II, IV, VII and IX in the cases of lobar pneumonia and a high incidence of type VI in the cases of bronchopneumonia. The mortality rate in the 147 cases of the series is 17.7 per cent, and the variation according to type is reported.

Nitrite Reaction as Diagnostic Test in Influenzal Meningitis.—A positive nitrite reaction with the spinal fluid was obtained by Greenthal in thirteen consecutive cases of influenzal meningitis, and was always absent in meningococcic, tuberculous and streptococcic meningitis. The nitrite test, according to the method described, may be used as a rapid corroborative test for the diagnosis of influenzal meningitis.

Infectious Mononucleosis.—A case of infectious mononucleosis in a baby, aged 7 months, is reported by Price with a general discussion of the disease. Especial reference is made to the difficulty in diagnosis between infectious mononucleosis and acute lymphatic leukemia in the early stage.

American Journal of Public Health, New York

20: 925-1054 (Sept.) 1930

Pan-American Sanitary Bureau. B. J. Lloyd, Washington, D. C.—p. 925.
How the Nurse Can Help Health Officer to Get His Message Across: From Standpoint of City. H. F. Vaughan, Detroit.—p. 930.
Animal Infections with Bacteria of Genus Brucella and Relation to Undulant Fever of Man. J. Traum, Berkeley, Calif.—p. 935.
Mental Hygiene in Public Health Program. J. L. McCartney, Hartford, Conn.—p. 943.
Pulmonary Tuberculosis in Students. L. H. Ferguson, Cleveland.—p. 955.
Physical Measurements of One Thousand Smith College Students. F. F. Gordon, Greensboro, N. C.—p. 963.
Tuberculous Patients in New Jersey Sanatoriums. E. Frankel and H. E. Heyer, Trenton, N. J.—p. 969.

Archives of Internal Medicine, Chicago

46: 361-552 (Sept.) 1930

*Digestion: Efficiency with Various Foods and Under Various Conditions. J. H. Childrey, W. C. Alvarez and F. C. Mann, Rochester, Minn.—p. 361.
*Addison's Disease in a Negro: Case. A. M. Sala and M. Jacobi, New York.—p. 375.
Chemistry and Metabolism in Experimental Yellow Fever in Macacus Rhesus Monkeys: II. Nitrogen Metabolism. A. M. Wakeman and C. A. Morrell, New Haven, Conn.—p. 382.
Hazard of Incision for Apparent Quinsy in Diphtheria. J. E. Gordon and D. C. Young, Detroit.—p. 402.
*Demonstration of Local Immunity of Peritoneum by Means of Shwartzman Phenomenon. I. A. Frisch, New York.—p. 410.
*Pernicious Anemia: Blood Regeneration During Early Remission. M. C. Riddle, Portland, Ore.—p. 417.
*Red Blood Cell Size in Anemia: Value in Differential Diagnosis. W. P. Murphy and G. Fitzhugh, Boston.—p. 440.
*Iron Metabolism in Pernicious and Secondary Anemia. H. H. Riecker, Ann Arbor, Mich.—p. 458.
*Significance of Electrocardiogram with Large Q in Lead 3. H. E. B. Pardee, New York.—p. 470.
*Modification of Dextrose Tolerance Test as Index of Metabolic Activity of Liver. T. L. Althausen, L. Gunther, J. B. Lagen and W. J. Kerr, San Francisco.—p. 482.
*Renal Damage Following Administration of Merbaphen (Novasurol): Nine Cases. D. H. Sprunt, New Haven, Conn.—p. 494.
*Transfusion from Group II (A) Donor to Group III (B) Recipient Without Fatal Result. L. Burnham, New York.—p. 502.
*Parathyroid Tumor and Changes of Bones. I. Snapper, Amsterdam, Holland.—p. 506.
*Experimental Gastric Ulcer: Effect of Consistency of Diet on Healing. G. B. Fauley and A. C. Ivy, Chicago.—p. 524.
Life of Reticulocytes: Experiments on Maturation. C. W. Heath and G. A. Daland, Boston.—p. 533.

Digestion: Efficiency with Various Foods and Under Various Conditions.—The amount of residue obtained after the digestion of various foods has been studied by Childrey et al. in six dogs, all deprived of the colon. The foods best digested were meat, rice, dextrose and fat in small amounts. These foods might well be used in the treatment of patients with diarrhea and in the preoperative or postoperative care of patients with serious diseases of the colon, rectum or anus. The combining of certain foods such as bread and milk and raw egg and milk, improved the digestion of both substances. Lactose, when given in considerable amounts, proved to be a laxative that interfered not only with the digestion of food eaten the same day but also with the digestion of food eaten the following day. Cheese and lard given one day also interfered with the digestion of food eaten the following day. Meat was better digested when given in lumps than when given finely comminuted. The same was true of Swiss cheese. Raw meat was better digested than cooked meat. Except in the case of a few foods, it was difficult to give enough so that the efficiency of digestion would fail. The dog usually protected himself by vomiting part of the meal. Raw egg when not mixed with other foods was highly indigestible. Raw cornstarch given alone was almost completely indigestible. The addition of lemon juice to food hurried the progress of residue through the bowel and interfered somewhat with the efficiency of digestion. Orange juice had little effect on digestion. Pie crust did not seem to be much more indigestible than white bread. It was more digestible than graham bread. Anxiety and excitement influenced adversely the efficiency of digestion. Food when taken in one large amount was better utilized than when taken in several fractions at half-hourly intervals. Apparently each feeding stimulated peristalsis and caused the food to pass too rapidly through the bowel. Purgatives, sodium bicarbonate and barium sulphate interfered with digestion. Morphine slowed the progress of material through the bowel. It had little effect on the digestion of ground cooked meat, given at the same time, but it interfered with the digestion of meat given the next day.

Addison's Disease in a Negro.—The fifth case of Addison's disease in a Negro, with necropsy observations, is recorded by Sala and Jacobi. The other recorded cases are reviewed. A comparison is made with the disease in white persons. The difficulty of diagnosis and the prominence of symptoms not usually stressed in white people are emphasized. The laryngeal and respiratory symptoms are stressed particularly.

Local Immunity of Peritoneum and the Shwartzman Phenomenon.—A modification of the phenomenon of local skin reactivity introduced by Shwartzman is described by Frisch. This modification consists in the employment of an intraperitoneal instead of an intravenous injection of toxic substance twenty hours after such a preliminary inoculation into the skin. By means of this modification, the principle of local peritoneal immunity was demonstrated. Rabbits in which the intraperitoneal injection of *Bacillus typhosus* culture filtrate was able to elicit the Shwartzman phenomenon in previously prepared skin sites were rendered negative to this phenomenon by repeated injections of this culture filtrate intraperitoneally. It was then shown that this skin reaction could still be produced if the reacting factors were introduced intravenously. It must thus be concluded that the immunity produced under these circumstances was of a distinctly local character involving only the peritoneum, and that the entire organism was not yet immune. It was also determined that between three and four injections of *B. typhosus* culture filtrate were necessary to render the peritoneum immune to this filtrate.

Blood Regeneration During Remission in Pernicious Anemia.—From evidence collected from a group of sixty-eight patients with pernicious anemia undergoing remission as a result of liver treatment and from a consideration of the theoretical factors that influence blood regeneration under these circumstances, Riddle concludes that the magnitude of the reticulocyte

response is governed directly by the extent of the bone marrow hyperplasia during relapse, and that the rate of the reticulocyte response is governed directly by the dosage of the active principle contained in liver. As the magnitude and the rate of the reticulocyte response are to a certain extent interdependent, the condition of the bone marrow apparently influences indirectly the rate of the response, and the dosage of liver used influences indirectly the magnitude of the response. For four patients whose collected data were satisfactory for mathematical analysis, the blood regeneration was formulated according to an equation used by Robertson to express a general law of biologic growth and regeneration. When the rate at which the reticulocytes in the blood of these patients were transformed into mature erythrocytes was estimated by this equation, the curve representing the concentration of reticulocytes during the reticulocyte response could be duplicated mathematically. It was estimated that in these patients two days was required for the differentiation of reticulocytes in the blood into mature erythrocytes. In two other patients in whom the stimulus to regeneration of blood was less intense, it was estimated that between three and four days was required for the maturation of reticulocytes in the blood to their mature form. A correlation of the relative maturity of the reticulocyte with the amount of reticular material it contained showed that, under the circumstances present, reticulocytes containing small amounts of reticular material disappeared during the following day. When the amount of reticular substance in a reticulocyte was used as a standard for estimating its degree of maturity, it was found that during the early part of the reticulocyte response reticulocytes were liberated in an earlier stage of development than toward the end of the response. The rate at which reticulocytes are liberated from the bone marrow into the blood appears to be a factor of importance which influences the rate and magnitude and velocity of the reticulocyte response. The rate of the liberation of the reticulocytes into the blood seems to be proportional to the rate at which they are formed from the more primitive red blood cells within the bone marrow and to the numbers of reticulocytes being formed there. An increase of a million red blood cells per cubic millimeter of blood is accompanied by an excretion of approximately 10 Gm. of endogenous uric acid in patients with pernicious anemia during early remission.

Size of Red Blood Cells in Anemia: Value in Diagnosis.—The determination of the individual cell volume as suggested by Haden and as recorded by Murphy and Fitzhugh is a more simple means of determining the average cell size than is the measurement of the mean cell diameter. Determinations of the individual cell volume are helpful in differentiating pernicious anemia from other anemias in most instances in which difficulty in diagnosis might arise, the main exception being in the rare condition called aleukemic leukemia. During and shortly following acute loss of blood there is an increase in the average individual cell volume, whereas in anemia resulting from chronic loss of blood the individual cell volume is generally low. Figures presented suggest that with adequate liver therapy the red blood cells of patients with pernicious anemia return to normal volume. An individual cell volume figure greater than normal should indicate inadequate treatment. Not only is the method for determining the individual cell volume a simple one to use, but the information so obtained is also as reliable as is that obtained by measurement of the mean diameter of the red blood cells by the method used.

Iron Metabolism in Pernicious and Secondary Anemia.—There is present in blood serum a partly diffusible iron compound the estimation of which, Riecker says, may be used to determine the presence and degree of iron starvation in disease and likewise the effect of iron medication. The amount of serum iron is increased in hemolytic diseases of the blood and decreased in the presence of long continued hemorrhage or a dietary deficiency of iron. In pernicious anemia, the level of the serum iron usually is higher than normal but becomes normal during remissions in the disease. A remission in pernicious anemia is accompanied by an increase in excretion over the intake of iron, as determined by analyses of stool and urine. In secondary anemia, one rarely finds as marked iron starvation as in experimental hemorrhage in animals on a diet low in iron, and from this standpoint alone the indications for medicinal iron are limited.

Electrocardiogram with Large Q in Lead 3.—Attention is directed by Pardee to the occurrence of records showing left axis deviation of Q-R-S or a normal electrical axis, combined with a large Q wave in lead 3, one that is 25 per cent or more of the largest deflection of Q-R-S in whichever lead this may occur. The majority of such records are obtained from patients with the anginal syndrome, but certain patients with myocardial fibrosis and congestive failure, certain patients with rheumatic heart disease, especially with pericarditis, and a few with hypertension will give such records. Certain patients who have cardiac symptoms but no definite evidence of cardiac disease have been found to show this large Q_3, and rarely (twice in 277 cases) such records are obtained from apparently normal hearts. These records show a clockwise rotation of the vectors of the Q-R-S group, and frequently there is an inversion of T_3 or of T_2 and T_3. Both of these features depend on right ventricular activity, and it is suggested that the finding of a large Q_3 indicates disease of the left ventricle, so that the right ventricle predominates during the spreading of the contraction in spite of the left axis deviation or normal axis direction of Q-R-S. The effect of diaphragmatic movements on the large Q_3 is noted, and it is suggested that the occasional finding of a large Q_3 in normal hearts may be due to an unusual distribution of the branches of the auriculoventricular bundle and that a high position of the diaphragm may be a contributory factor.

Modification of Dextrose Tolerance Test as Index of Metabolic Activity of Liver.—Evidence is presented by Althausen et al. to show the value of the modified dextrose tolerance test as a metabolic liver function test. The test possesses the following advantages: (*a*) It is simple and requires no especial equipment. (*b*) It is harmless to the patient. (*c*) Unlike the levulose and galactose tolerance tests, it is reliable not only in disease groups but also in individual cases. (*d*) It brings out latent functional impairment of the liver and permits one to follow the progress of the disease. (*e*) It checks well with the results of the rose bengal test. (*f*) As a metabolic test, its results are probably independent of biliary obstruction. (*g*) In combination with a dye excretion test, it offers valuable diagnostic aid in toxic cirrhosis of the liver. The chief limitation of the modified dextrose tolerance test is its inaccuracy in cases of diabetes mellitus with marked morning hyperglycemia.

Renal Damage Following Administration of Merbaphen.—Among 741 necropsies, Sprunt found nine instances in which the patients received merbaphen during the clinical course of their illness. In three of these cases, extensive necrosis of the renal epithelium was observed. Attention is drawn to the fact that in one case merbaphen was given under circumstances adverse to its use, while in two cases conditions which may be considered as counterindications were also present.

Transfusion from Group II (A) Donor to Group III (B) Recipient Without Fatal Results.—Burnham reports a case in which a full transfusion, 400 cc., into a recipient weighing but 85 pounds (38.6 Kg.) of group II (A) blood into a group III (B) recipient was accidentally performed, with only slight symptoms: coughing, oppression in the chest, slight dizziness and pain in the lumbar regions. The incompatible transfused blood remained in the circulation of the recipient from three to five days. The absence of serious consequences was shown to be due to the fact that all of the group-specific isoagglutinin a in the recipient's serum was entirely incapable of clumping the group II (A) cells of the donor at body temperature, although it clumped these cells vigorously at room temperature.

Parathyroid Tumor and Changes of Bones.—The following points were noted by Snapper in a patient suffering from extensive decalcification of the bones, combined with violent pain: 1. The illness began as osteitis fibrosa generalisata. Therefore there existed a pseudo-osteomalacic end-stage of Recklinghausen's disease. 2. There was a great increase in the calcium content of the serum. The deviation was considered to be a symptom of hyperfunction of the parathyroids. 3. There was a small swelling in the thyroid. On account of these facts, a tumor of a parathyroid gland was suspected, and it was found during operation. After extirpation of this small tumor, clinical recovery occurred.

Experimental Gastric Ulcer: Effect of Consistency of Diet on Healing.—A simple ulcer of the rabbit's stomach (from 1.5 to 2 cm. in diameter) produced by excision, Fauley and Ivy state, heals within thirty days, irrespective of the consistency of the diet. A similar ulcer, but with a silk suture in its base, will heal if the rabbit is fed a soft diet but will tend to become chronic if the rabbit is fed a rough diet. They have confirmed Ferguson's observation that, if an acute lesion is made by this method and the rabbits are kept on a rough diet, a chronic ulcer results in numerous instances. The consistency of the diet has an influence on the healing of an ulcer of the stomach, if other factors that tend to delay the healing are operating simultaneously. These results indicate that in chronic ulcer in man a soft diet would facilitate the healing of the ulcer, which confirms clinical experience and supports the use of a diet of the character of that employed in the generally accepted therapeutic procedures for gastric ulcer.

Archives of Pathology, Chicago

10: 349-498 (Sept.) 1930

Lesions in Experimental Amebic Dysentery. D. L. Martin, Tacoma, Wash.—p. 349.
*Basal Cell Carcinoma. M. Owen, Fort Worth, Texas.—p. 386.
*Neuromuscular Changes in Amyelia and Relation to Those of Congenital Clubfoot. R. J. Dittrich, Wichita, Kan.—p. 395.
*Changes of Spleen in Subacute Bacterial Endocarditis. H. Fox, Philadelphia.—p. 402.
Effect of Certain Toxic Substances in Bacterial Cultures on Movement of Intestines. E. E. Ecker and B. J. Wolpaw, Cleveland.—p. 407.
Juvenile Arteriosclerosis. P. Zeek, Cincinnati.—p. 417.
New Method of Decalcification. N. Evans and A. Krajian, Los Angeles. —p. 447.

Basal Cell Carcinoma.—Owen's observations of 836 cases do not indicate that true basal cell carcinoma may occur on the mucous membrane. The review lends weight to the contention that carcinomas having their origin on the mucous membrane lack that low grade of malignancy which the basal cell carcinomas that are situated on the skin possess. It would seem rather hazardous to diagnose as basal cell carcinoma a tumor having its origin from the basal cell layer of the mucous membrane when there are present metastasis and rapid extensive growth consisting chiefly of undifferentiated cells or cells showing squamous characteristics. This tumor seems to be a squamous cell carcinoma.

Neuromuscular Changes in Amyelia and Relation to Those of Congenital Clubfoot.—A study made by Dittrich of the muscles of the lower extremities in a case of amyelia indicates that the muscular alterations are similar to those found in congenital clubfoot, with the exception that the changes are not so far advanced. The appearance of the sciatic nerves in amyelia is similar to that of the nerves in congenital clubfoot, with the addition, in the former, of a marked degree of hyperemia. The relationship of the spinal canal in amyelia to the spinal cord indicates that the primary defect of development is that of the bony portions of the spine.

Changes of Spleen in Subacute Bacterial Endocarditis.—The principal features of the spleen in subacute bacterial endocarditis of the *viridans* type found by Fox were as follows: The most important gross lesion is the infarct. Practically every case shows perisplenitis whether an infarct exists or not. In early stages the organ is not greatly enlarged but suggests a soft splenic tumor of the congestive type. In the later stages the organ is definitely enlarged as the result of hyperplasia of its constituent tissue and the inflammatory and hyperplastic changes incident to infarctions. Hyperplasia of lymphatic elements proper is not a feature of this disease; on the contrary, those tissues are inactive. Hyperplasia of cells of the reticuloendothelial series is not seen early but appears more evident in the cases of longer duration. Marked changes of the linings of blood vessels are not especially peculiar to this disease. Evidences of destruction of blood are missing in early but are present in older cases. Degenerations and coagulation within germ centers are frequently observed. Structures suggesting Bracht-Wächter bodies have been seen several times. Clasmatocytes are occasionally seen, but rarely in any numbers. Polymorphonuclear neutrophils are prominent, as revealed in spleens of this series of cases of bacterial endocarditis. Eosinophils are also frequently seen.

Assn. American Medical Colleges Journal, Chicago

5: 257-319 (Sept.) 1930

*Correlation of Qualifying Examinations. W. L. Bierring.—p. 257.
Strip Film Photography as Aid in Medical Teaching. F. R. Krusen, Philadelphia.—p. 262.
A Great Adventure. W. Darrach, New York.—p. 267.
*Experimental Method in Modern Medicine. B. P. Babkin, Montreal. —p. 271.
Survey of Medical Schools of United States Relative to Teaching of Diseases Due to Allergy. R. M. Balyeat, Oklahoma City.—p. 276.
Some Medical Problems Ahead. W. C. Rappleye, New Haven, Conn. —p. 281.
Language Culture in Teaching of Medicine. G. deTarnowsky, Chicago. —p. 288.
Educational Rôle of Modern Hospital. F. L. Babbott, Jr., New York. —p. 289.

Correlation of Qualifying Examinations.—Bierring suggests the acceptance of the National Board examination by the medical schools. This would apply only to the written tests in the fundamental medical and clinical sciences.

Experimental Method in Modern Medicine.—Babkin believes that the best way to introduce the experimental method into practical medicine would probably be to train young medical graduates, especially those whose aim is an academic career in medicine or surgery, for a couple of years in the biologic laboratories. By this is meant not so much technical training in some of the biologic sciences—physiology, biochemistry, pharmacology—as the acquisition of a certain mental attitude toward theoretical and practical medical problems. A "scientific" point of view on phenomena under observation, and "scientific" treatment of such, cannot be acquired from books. Only actual research work in a laboratory, and continuous and strenuous mental effort directed toward the solution of certain experimental problems, will teach a young man how to deal scientifically with them. At the present time an attempt is being made in that direction at McGill University by the creation of a scheme of "Experimental Surgery" (supported by the Rockefeller Foundation). Young surgeons, who have proved themselves capable in that branch of medical science, enter one of the biologic laboratories (physiology, biochemistry or pharmacology) and work there for two years as research students conducting experiments, many of which involve operative procedures on animals. They will return afterward to the university surgical clinic, where it is hoped that they will retain and foster within themselves the experimental spirit which they acquired in the laboratories.

California and Western Medicine, San Francisco

33: 625-696 (Sept.) 1930

Hypochloremia. G. M. Curtis, Chicago.—p. 625.
Aspiration in Tonsillectomy: Comparative Merits of Posture and Other Factors. H. J. Hara, Los Angeles.—p. 628.
Resuscitation of New-Born. K. L. Schaupp, San Francisco.—p. 638.
*Extract of Suprarenal Cortex Substance. W. B. Coffey and J. D. Humber, San Francisco.—p. 640.
Basic Principles Involved in Modern Controllable Spinal Anesthesia. F. I. Harris and E. Bolze, San Francisco.—p. 652.
Amebic Abscess of Liver: Treatment. E. D. Kilbourne, Santa Ana.— p. 658.
*Carotinemia. H. E. Miller, San Francisco.—p. 662.
Destructive Calculus Disease. F. Farman, Los Angeles.—p. 663.
Traumatic Shock: Newer Aspects and Treatment. G. K. Rhodes and C. McKenney, San Francisco.—p. 665.
Psychoneurotic Patient and Clinician. W. H. Barrow, San Diego.— p. 670.
Lure of Medical History: Sixteenth Century German Medicine. S. L. M. Rosenberg, Los Angeles.—p. 673.
Problem of Skin Graft: Newer Technic. H. L. Updegraff, Hollywood. —p. 679.
Improvised Darkfield Apparatus. S. E. Light, San Francisco.—p. 681.

Extract of Suprarenal Cortex Substance.—Coffey and Humber discuss in detail their work with suprarenal cortex extract. Under the auspices of the Better Health Foundation of California they intend to carry on a constructive five-year program of scientific research. The Better Health Foundation of California is a nonprofit corporation and was organized to carry on work for the extension of scientific research and other worthy purposes. To obtain the best results it has been decided that the future distribution of their extract for research work to cooperating physicians, clinics or hospitals will be made available through the Better Health Foundation, because

in that way improper claims or commercial exploitation of the extract may be better prevented.

Carotinemia.—Miller reports three cases. The first patient with a severe generalized, allergic dermatitis developed a yellow discoloration of the skin of the entire body while eating raw carrots and other vegetables. The second patient, with an ill defined gastric complaint, was diagnosed as having gallbladder disease because the yellow color of her skin was thought to be due to bile pigments. The third patient sought medical care because of the embarrassment of the dirty, yellow color of her palms.

Canadian Medical Association Journal, Montreal

23: 333-476 (Sept.) 1930

Factors in Delivery of Medical Services. W. C. Rappleye, New Haven, Conn.—p. 341.
*Detection of Insular Hormone in Duodenum. N. B. Laughton and A. B. Macallum, London, Ont.—p. 348.
Problem of Thyroid Intoxication. R. R. Graham, Toronto.—p. 349.
*Sclerosis and Occlusion of Coronary Arteries. O. Klotz and W. Lloyd, Toronto.—p. 359.
Coronary Thrombosis. R. W. Scott, Cleveland.—p. 366.
Heart Disease in Middle Life. A. J. MacKenzie, Toronto.—p. 370.
*Sickle-Cell Anemia: Case. J. B. Scriver and T. R. Waugh, Montreal.—p. 375.
Birth Traumatism as Factor in Urinary Infection. F. S. Patch, Montreal.—p. 381.
Rational Surgical Treatment of Chronic Antral Disease. J. G. Hunt, London, Ont.—p. 386.
*Multiple Adenopapillomata of Stomach: Case Showing Varying Degrees of Malignancy. F. D. Ackman, Montreal.—p. 391.
Acute Intestinal Obstruction Involving Appendix. A. L. Lockwood, Toronto.—p. 400.
Shoulder Pain: Consideration of Some Easily Overlooked Causes. A. Gillies, Toronto.—p. 402.
Postoperative Nausea. W. B. Burnett, Vancouver.—p. 406.
Hand Injuries and Compensation. E. St. Jacques, Montreal.—p. 410.
Flavoring of Expectorant Mixtures. J. F. Johnston, Toronto.—p. 412.
Intravenous Pyelography. A. Laroche, Montreal.—p. 414.
Rupture of Aorta. C. J. Tidmarsh, Montreal.—p. 416.
Sarcoma Botryoides Corporis Uteri: Case. P. J. Kearns, Montreal.—p. 418.
Lymphosarcoma of Widespread Involvement and Rapid Termination: Case. P. W. Head, Birtle, Man.—p. 419.
Epilepsy. G. F. Boyer and W. W. Barraclough, Toronto.—p. 420.
Nauheim Treatment and Carbon Dioxide Foam Baths. L. Shillito.—p. 423.
Clinical Notes in Ophthalmology. L. Kazdan, Toronto.—p. 425.

Detection of Insular Hormone in Duodenum.—It would appear from experiments made by Laughton and Macallum that a substance exists in normal duodenal mucosa which has a specific stimulating influence on the islets of Langerhans; in other words, an insular hormone. This, coupled with Workman's observations, introduces a new factor into the etiology of diabetes mellitus. Insular failure may result from excessive stimulation of the islets by the duodenal hormone produced as a result of excessive sugar intake over long periods. Secondly, inflammatory conditions in the duodenum may lead to a deficiency in the hormone, followed by a diminished activity in the islets themselves resulting in a hyperglycemia.

Sclerosis and Occlusion of Coronary Arteries.—Forty-four cases of coronary disease seen in the necropsy service during the past four years have been reviewed by Klotz and Lloyd. Coronary disease of the heart usually affects men between the ages of 55 and 60, rarely before 30, and is the outcome of an endarteritis associated with atheroma and calcification. The arteriosclerotic process brings about a stenosis of the vessel, but the complete occlusion results from thrombosis. They have not encountered a case in which thrombosis developed in the absence of sclerotic arteries. The sclerotic patches in the arteries are multiple, various branches of the right and left coronary being involved at the same time. The presence of stenosing endarteritis in both right and left coronary arteries enhances the myocardial damage that results from nutritional disturbances. A unilateral stenosing endarteritis may progress to a considerable degree without causing myocardial damage or cardiac manifestations. If the developing stenosis progresses slowly, the anastomotic circulation between the right and left coronaries compensates for the vascular derangement, when one coronary alone is seriously affected. Rapidly occluding processes as obtained in thrombosis induce more serious myocardial disturbances than the slowly progressive and compensating stenoses associated with chronic endarteritis. The stenosing arteriosclerosis appears to have its beginning either in a primary endarteritis or in an intimal degeneration followed by endarteritis. Although rheumatic lesions of the arteries may play a part in the origin of the sclerosis, they were unable to demonstrate this association in their specimens. Nor were they able to demonstrate a direct relation between syphilis and coronary sclerosis. Furthermore, in this discussion they do not include the stenosis arising at the aortic entrance to the coronary arteries resulting from syphilitic aortitis. The manner of distribution of the scleroses does not support the contention that the arterial lesions are the result of mechanical stresses due to unique branching of the coronary arterial system. The factors in the causation of endarteritis and atheroma of the coronary arteries are still undetermined.

Sickle-Cell Anemia.—Scriver and Waugh report a case of sickle-cell anemia observed in Canada and show that the number of sickle cells in the blood in vivo may be varied by the change of the partial oxygen pressure, that this is a reversible reaction, and that sickling takes place when the oxygen pressure falls below a pressure of 45 mm. of mercury. These observations agree with those previously noted in vitro by Hahn and Gillespie. An explanation is advanced for the presence of large aggregations of sickle cells in organs obtained at necropsy or at operation.

Multiple Adenopapillomas of Stomach.—Reports of eighty-eight cases of multiple gastric adenopapillomas have been found by Ackman in the literature, and one more case is added. The lesion is classified pathologically under two heads: polyadenoma "polypeux" and polyadenoma "en nappe." Polyadenoma "en nappe" is much rarer, only seven cases having been reported previously. The eighth is described here. The condition is generally thought to be inflammatory in origin, though a congenital origin and a familial tendency have been noted by several writers. The experimental production of these tumors by irritants is significant. There is no characteristic symptomatology, though epigastric pain is the most frequent symptom. Hematemesis is occasionally the first sign. Of laboratory diagnostic aids the roentgenogram probably comes first, though even this is apt to be misleading. Achlorhydria is an almost constant finding and when combined with myxorrhea is considered very suggestive. Malignant transformation is quite common but is rarely multiple. The latter fact is thought to be due to immunity. Their case showed, in addition to a large carcinoma, malignant changes in the stalk of a pedunculated adenopapilloma at the pylorus. Treatment should be surgical.

Journal of Industrial Hygiene, Baltimore

12: 259-290 (Sept.) 1930

*So-Called Cyanide Rash in Gold Mine Mill Workers. W. H. Braddock and G. R. Tingle, Jarbidge, Nev.—p. 259.
Fatal Case of Poisoning by Ethylene Chlorhydrin. E. L. Middleton.—p. 265.
*Dust Inhalation and Iron Ore Mining. E. L. Collis and K. W. Goadby.—p. 266.
New Methods of Heating Buildings. H. M. Vernon, London.—p. 281.

So-Called Cyanide Rash in Gold Mine Mill Workers.—Braddock and Tingle discuss a dermatitis that occurs among workers in mill plants where the cyanide process of gold extraction is used. It is suggested that the condition may be a simple dermatitis due to irritation by a strong caustic and not to poisoning by cyanide, and that the immediate exciting agent is probably lime, whether as the oxide in the dust flying round the slaking barrel or as a strong solution of the hydroxide in the mud of the mud press.

Dust Inhalation and Iron Ore Mining.—Collis and Goadby assert that prolonged inhalation of dust from iron ore does not originate miners' phthisis nor any tendency to pneumonia, but it does set up bronchitis; it causes shortness of breath and impairs chest expansion without, however, setting up troublesome symptoms; it is associated with roentgen shadows indicative of fine diffuse fibrosis; and it originates definite generalized pulmonary changes of a fibrotic type which impair the usefulness of the lungs.

Journal of Lab. & Clinical Medicine, St. Louis

15: 1177-1316 (Sept.) 1930

*Modern Conception of Arthritis. R. L. Cecil, New York.—p. 1177.
Clinical Observations in Chronic Arthritis. L. T. Swaim, Boston.—p. 1182.
*Synovial Fluid in Health and Disease: Arthritis. C. E. Forkner, Boston.—p. 1187.
*Chronic Arthritis: I. Basic Diet for Chronic Arthritis. R. G. Snyder and C. H. Traeger, New York.—p. 1214.
*Use of Drugs in Treatment of Atrophic Arthritis. A. G. Young, Boston.—p. 1231.
*Treatment of Chronic Infectious Arthritis by Sympathetic Ganglionectomy and Trunk Resection. P. S. Hench, M. S. Henderson, L. G. Rowntree and A. W. Adson, Rochester, Minn.—p. 1247.
Pain of Nerve Root Origin in Hypertrophic Ostearthritis of Spine as Confusing Factor in Diagnosis. L. Gunther, Los Angeles.—p. 1257.
Chronic Arthritis: Classification, Etiology and Pathology with Outline of Rational Treatment. L. W. Ely, San Francisco.—p. 1264.
*Analysis of Results of Treatment of Cases of Type II Arthritis in Stanford Clinic. P. A. Exelby, San Francisco.—p. 1285.
Importance of Intensive Program in Management of Arthritic Patient. W. C. Stoner, Cleveland.—p. 1291.

Modern Conception of Arthritis.—Cecil states that in rheumatic fever the most important predisposing factor is environment. Rheumatic fever is a rare disease among the well-to-do. It is extremely common among the children of the poor. This increase of susceptibility in the poor is probably a combination of improper diet and exposure to cold. The well-to-do are better fed and better clothed and escape infection. Probably another predisposing factor is exposure to a carrier of the rheumatic fever virus. This may be heredity, but contagion may be an important factor. In both rheumatic fever and infectious arthritis, focal infection is of vital significance. Statistics show that rheumatic fever cannot be prevented by the removal of all foci of infection, but the incidence is considerably reduced. Other factors are influential in the etiology of infectious arthritis. Among them, nervous or emotional shock should be stressed. It is surprising what a large percentage of these patients give a history of overwork or some emotional disturbance just prior to the onset of arthritis. Other factors, such as trauma and exposure to cold and dampness, sometimes provoke the first attack. Cecil has seen a number of butchers who say they have contracted arthritis from too many trips to the refrigerator. In hypertrophic arthritis, overweight and advancing years are the two great predisposing agents. Heredity also plays an important part. Nearly every patient with Heberden's nodes will give a history of a mother or father who was afflicted with the same condition.

Synovial Fluid in Health and in Disease: Arthritis.—According to Forkner, a sugar content under 60 mg. per hundred cubic centimeters is almost always associated with infection in the joint. A sugar content under 45 mg. is strong evidence in favor of the presence of pyogenic organisms. A p_H value in the neighborhood of 7.0 is strong evidence in favor of the presence of bacteria. A p_H value under 7.0 is almost certain to be associated with the presence of pyogenic organisms. An icteric index over 5.5 is almost invariably a sign that trauma is playing or has played a significant part in the etiology. A positive Wassermann reaction in the joint fluid associated with a negative reaction in the blood is strong evidence in favor of syphilitic arthritis. A positive Wassermann reaction in the blood associated with a negative reaction in the synovial fluid probably represents good protection against the ultimate development of syphilitic joint disease. A high leukocyte count of 11,000 or more cells per cubic millimeter associated with 60 per cent or more of granulocytes in the synovial fluid of a patient with chronic nonspecific arthritis is likely to be associated with the presence of a positive culture of attenuated organisms. A leukocyte count in the joint fluid of 5,000 or fewer cells together with less than 50 per cent of granulocytes in a patient with chronic nongonorrheal arthritis is likely to be associated with a negative culture of the fluid. The presence of large numbers of red blood corpuscles in the synovial fluid of a patient with arthritis is evidence against chronic nongonorrheal, tuberculous, syphilitic or acute septic arthritis and is in favor of trauma as the etiologic agent. Animal inoculation is of value in the diagnosis of syphilitic arthritis occurring early in the disease.

Basic Diet for Chronic Arthritis.—Snyder and Traeger assert that the regulation of diet is of utmost importance in the treatment of chronic arthritis. Each patient should be placed, for a short period, at the beginning of treatment on a basic diet, which is then regulated and adjusted to fill the individual requirements of the case. The regulation of the diet depends largely on such factors as the patient's general condition, weight, blood on chemical examination, and clinical progress. The basic diet must have low caloric value, low carbohydrate, protein and purine values, adequate vitamin content, elasticity and availability. A basic diet for chronic arthritis is presented.

Use of Drugs in Treatment of Atrophic Arthritis.—Young concludes his review by stating that when drug treatment is instituted it should be done with the definite purpose of correcting some phase of the patient's illness. In order to do this, one must know the patient clinically and understand the pharmacology of the drug to be used. Drugs used in this manner in conjunction with other methods, as indicated by the condition of the patient, will be of distinct value and contribute toward the improvement that can be obtained in a large percentage of these patients when properly treated.

Treatment of Chronic Infectious Arthritis by Sympathetic Ganglionectomy.—Hench et al. believe that resection of sympathetic ganglions and trunks is not applicable to all forms of arthritis, nor is it useful in all stages and degrees of chronic infectious arthritis. In this experimental stage it is the authors' impression that it is of definite value in certain carefully selected cases. It seems to be a justifiable procedure in these selected cases when all other reasonable measures have failed. Used properly, but not delayed too long, it may, by maintaining increase in temperature, circulation and perhaps metabolism of the more distal joints of the extremities, induce a stage of compensation in the arthritic disability that cannot be produced otherwise. Their final opinion regarding the proper selection of cases for the operation, and its value in these cases, cannot yet be expressed.

Results of Treatment of Arthritis.—The results of treatment of 108 cases of type II arthritis by the orthopedic clinic of the Stanford University School of Medicine are noted by Exelby. Sixty-three of the patients received emetine. Of 134 cases of type II arthritis in which stool examinations were made, 27 per cent showed positive results. Of 117 cases of type II arthritis in which dental examinations were made, 58 per cent showed one or more dead or abscessed teeth. Of the sixty-three patients treated with emetine, 8 per cent received complete relief from symptoms, 19 per cent considerable relief, 19 per cent slight relief, 22 per cent no relief, and the results are not known in the remaining 32 per cent. There is no correlation between the duration of the process and the success of treatment in this series of cases. The complete 12 grain (0.8 Gm.) course of emetine produced more favorable results than did shorter courses of emetine. Of fifty patients who received a full course of emetine, 58 per cent showed some toxic symptoms; 32 per cent showed moderately severe or severe reactions. Women seem somewhat more susceptible to emetine intoxication than do men. The age seems to affect the susceptibility but little. The fall in blood pressure found in almost all persons taking the emetine treatment seems not to be related in degree to other toxic manifestations of the drug.

Medical Journal and Record, New York

132: 261-312 (Sept. 17) 1930

Prophylactic Phototherapy. F. T. Woodbury, New York.—p. 261.
Intrapleural Pneumolysis by Jacobaeus-Unverricht Method. L. S. Peters and P. G. Cornish, Jr., Albuquerque, New Mexico.—p. 265.
Sacro-Iliac Joint as Cause of Lower Abdominal Pain with Simple Method of Diagnosis. C. S. Wachs, Philadelphia.—p. 269.
Cut Weeds and Prevent Hay-Fever. N. Thiberge, New Orleans.—p. 271.
Problem of Pruritus Ani. J. F. Montague, New York.—p. 272.
Gold in Treatment of Tuberculosis. J. W. Kime, Fort Dodge, Iowa.—p. 274.
Diphtheria and Typhoid Carriers: Suggestions on How Best to Ward Off Epidemics. M. Feldman, New York.—p. 276.
Cancer: Yesterday, Today and Tomorrow. W. S. Bainbridge, New York.—p. 279.
Treatment of Carcinoma of Tongue. M. Friedman, New York.—p. 284.
Cancer of Esophagus. E. P. McCullagh, Cleveland.—p. 288.
Primary Carcinoma of Ureter. H. J. Lindner, R. D'Aunoy and R. J. Mailhes, New Orleans.—p. 290.
Colloidal Metals in Treatment of Malignancy. N. Alpert, Baltimore.—p. 295.
California Medicine. J. W. Shuman, Los Angeles.—p. 298.

Missouri State M. Assn. Journal, St. Louis

27: 425-468 (Sept.) 1930

Is Medical Profession Discharging Its Full Duty to Public? W. G. Morgan, Washington, D. C.—p. 425.
Allergy and Immunity in Tuberculosis. H. H. Bell, St. Louis.—p. 429.
Epilepsies. G. W. Robinson, Jr., Kansas City.—p. 433.
Acute Lymphatic Leukemia: Two Cases. A. A. Werner, St. Louis.—p. 438.
Carbolfuchsin Paint in Treatment of Epidermophytosis. N. Tobias, St. Louis.—p. 443.
Treatment of Chronic Heart Disease. S. Luton, St. Louis.—p. 444.
Puerperal Infection Due to Anaerobic Streptococci. O. H. Schwarz, St. Louis.—p. 450.
Osteomalacia in Pregnancy. W. J. Dieckmann, St. Louis.—p. 451.
Treatment of Chronic Nephritis. H. A. Bulger, St. Louis.—p. 452.

Northwest Medicine, Seattle

29: 395-442 (Sept.) 1930

Third Type of Toxic Thyroidism. C. A. Roeder, Omaha, and W. A. Killins, Green Bay, Wis.—p. 395.
Classification of Goiter. S. D. Van Meter, Denver.—p. 404.
Thyrotoxicosis and Neurosis. L. Seed, Chicago.—p. 407.
Adenomatous Goiter. H. W. Riggs, Vancouver, B. C.—p. 410.
Hyperthyroidism. L. Long, Oklahoma City.—p. 411.
Complications Following Thyroidectomy. N. W. Gillette, Toledo, Ohio.—p. 413.
Prevention of Postoperative Recurrence in Thyroidectomy. J. E. Else, Portland, Ore.—p. 416.
Hyperthyroidism and Hypothyroidism After 2,500 Thyroidectomies. A. G. Brenizer, Charlotte, N. C.—p. 420.
Variations in Normal Positions of Parathyroids. R. J. Millzner, San Francisco.—p. 423.
Effects of Thyroid Activity on Female Organism. R. R. Wilson, Kansas City, Mo.—p. 425.
Necrosis of Heart and Liver in Thyrotoxicosis. W. J. Kerr, San Francisco.—p. 430.

Oklahoma State Medical Assn. Journal, Muskogee

23: 297-324 (Sept.) 1930

Symptoms and Diagnosis of Syphilis in New-Born and Early Infancy. C. H. Hall, Oklahoma City.—p. 297.
Symptomatology and Diagnosis of Late Manifestations of Congenital Syphilis in Children. W. M. Taylor, Oklahoma City.—p. 299.
Roentgenologic Manifestations of Syphilis in Infancy and Early Childhood. J. E. Heatley, Oklahoma City.—p. 300.
Treatment of Syphilis in New-Born. C. B. Taylor, Oklahoma City.—p. 301.
Bone Syphilis in Children. W. K. West, Oklahoma City.—p. 302.
Relation of Syphilis to Internal Medicine. C. P. Bondurant, Oklahoma City.—p. 302.
Effect of Gas Explosions on Hearing. W. T. Salmon, Duncan.—p. 306.
Streptococcic Septicemia with Middle Ear as Infection Atrium. A. C. McFarling, Shawnee.—p. 308.
Chemical Analysis of Blood and Functional Tests as Aid in Diagnosis. V. G. Isvekov, Shawnee.—p. 310.

Pennsylvania Medical Journal, Harrisburg

33: 805-922 (Sept.) 1930

Chemistry of Nephritis. W. S. McEllroy, Pittsburgh.—p. 822.
Diagnosis of Uremia. A. Stengel, Philadelphia.—p. 825.
Treatment of Kidney Disease. J. D. Heard, Pittsburgh.—p. 827.
Low Back Pains. J. T. Rugh, Philadelphia.—p. 831.
Tuberculosis of Spine. C. C. Yount, Pittsburgh.—p. 835.
Diagnosis and Treatment of Postural Deformities of Spine. D. P. Willard, Philadelphia.—p. 835.
Cutaneous Manifestations of Systemic Disorders. F. Amshel, Pittsburgh.—p. 839.
Middle Ear and Problems. J. A. Babbitt, Philadelphia.—p. 844.
Middle Ear and Problems from Standpoint of Vascular Anatomy and Complications. W. J. Gardner, Philadelphia.—p. 849.
Middle Ear and Problems from Standpoint of Vertigo. L. Fisher, Philadelphia.—p. 852.
Thymic Syndrome. A. M. Dannenberg, Philadelphia.—p. 855.
Roentgen Diagnosis and Treatment of Enlargement of Thymus. E. P. Pendergrass, Philadelphia.—p. 860.
Conditions Simulating Thymus Disease and Diagnosis. J. M. Higgins, Sayre.—p. 866.

Public Health Reports, Washington, D. C.

45: 2077-2151 (Sept. 5) 1930

Chief Etiologic Factors of Plague in Ecuador and Antiplague Campaign. C. R. Eskey.—p. 2077.

45: 2153-2220 (Sept. 12) 1930

Bacillus Psittacosis Nocard, 1893: Failure to Find It in the 1929-1930 Epidemic in the United States. S. E. Branham, G. W. McCoy and C. Armstrong.—p. 2153.
College Course in Child Hygiene. E. B. Sterling.—p. 2160.
Chief Etiologic Factors of Plague in Ecuador and Antiplague Campaign. C. R. Eskey.—p. 2162.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

2: 409-456 (Sept. 13) 1930

Treatment of Congenital Dislocation of Hip. H. P. H. Galloway.—p. 409.
*Bacillus Coli Infections. K. D. Wilkinson.—p. 412.
*Bacillus Coli Infections. D. Nabarro.—p. 414.
Laboratory in Scheme of Preventive Medicine. W. G. Willoughby.—p. 418.
Management and Treatment of Incipient Cataract. L. V. Cargill.—p. 419.
Diagnosis of Cancer of Larynx. E. D. D. Davis.—p. 421.
*Intestinal Obstruction: Unusual Case. B. K. Sikand and E. V. Claydon.—p. 422.

Bacillus Coli Infections.—Wilkinson discusses a *Bacillus coli* infection of the urine, a condition which he says is frequent in children, commoner in girls than in boys, appearing in acute, chronic and recurrent forms, but which is relatively seldom fatal. This condition has been called pyelitis, but it is not always part of a septicemia or evidence of a nephritis. It is hardly likely that a severe septicemic condition in children, with renal infection and possibly abscess formation, could have a mortality as low as 3 per cent after the age of 2, and it is significant that the collection of seventy-eight postmortem records took no less than twelve years at two large children's hospitals, whereas, clinically, *B. coli* infections are of common occurrence.

Bacillus Coli Infections.—In Nabarro's experience, infections with *B. coli* in children are by no means rare; they often get well spontaneously; at other times they become chronic or tend to recur. In the chronic and recurring cases cystoscopy, pyelography and, if necessary, catheterization of the ureters should be carried out in order to ascertain whether there is any abnormality present to account for the clinical condition. These surgical procedures should not be so long delayed that the child's kidneys are found to be irreparably damaged when the biochemist makes an investigation of the blood urea and of the renal function. Every case of urinary tract infection should be investigated by a team of five—a physician, a surgeon, a bacteriologist, a biochemist and a radiologist and, if the patient should unfortunately die, then also a pathologist to hunt carefully for anatomic abnormalities. If this were always done these cases would be more thoroughly and systematically investigated than in the past, and the results would be better than have hitherto been obtained.

Intestinal Obstruction.—Sikand and Claydon relate the case of a man who was suddenly seized with acute abdominal pain after eating a heavy meal. He vomited at the time and continued to do so throughout the night. The following morning he was markedly collapsed, with a pinched face and a pulse uncountable and imperceptible at the wrist. The respiration rate was 22 and the temperature 97.7 F. The abdomen was distended, rigid and tender, especially in the epigastrium; movements were practically nil. The patient had not passed urine and the bowels had not been open since before the onset of the attack; a gentle enema gave no result. The abdomen was opened by a midline subumbilical incision. Loops of slightly distended but much engorged small intestine presented, and the abdominal cavity contained a considerable amount of blood-stained fluid. The trouble was eventually traced to the sigmoid loop, which was long and mobile, and which had swung across the abdomen to the right side, where it had herniated into a large retrocecal fossa. It was tightly gripped in this position by a tense peritoneal band extending from the abdominal wall behind the cecum to the lower end of the attachment of the mesentery of the ileum. The sigmoid loop was tightly stretched but was not twisted. It was found that in taking up this position it had come to lie across the mesentery, obstructing the blood supply of the ileum for six or eight feet to within one foot of the ileocecal junction, where the structures, including the appendix, were quite normal. The constricting band of mesentery was divided. Continuous intravenous saline solution was given throughout the operation, but at this stage life was almost extinct and it was considered advisable to close the abdomen. The patient died about one hour later.

Edinburgh Medical Journal

37: 497-568 (Sept.) 1930

Melanogenesis. G. H. Percival and C. P. Stewart.—p. 497.
*Analogy of Black Colostrum to Melanidrosis: Colored Milk and Colored Sweat. D. M. Greig.—p. 524.
*Nature and Structure of Suprarenal Cortex. J. P. M'Gowan.—p. 545.

Analogy of Black Colostrum to Melanidrosis.—Greig points out that in sweat secreted under abnormal conditions there may be on rare occasions some constituent which on oxidation by air yields a black pigment; in colostrum there may be on rare occasion some constituent which by the action of oxidase, which colostrum is known to contain in excess, yields a black pigment. The change in the sweat takes place on the surface; the change in the milk occurs intraductally. The sudoriparous and the mammary glands have the same phylogeny and similar physiologic principles modify and control their function. The conclusion is justifiable that there is a close analogy between black colostrum and melanidrosis.

Nature and Structure of Suprarenal Cortex.—Certain appearances of the suprarenal of fowls suffering from leukosis have led M'Gowan to make deductions regarding the structure and function of its tissues. The occurrence of a myelocytic proliferation in the sinusoids would seem to be an instance of the general rule that myeloid tissue is formed in endothelial or subendothelial situations in veins. The cortical nodules are considered to be periarterial structures and to be formed in the mature gland by the development of the reticulo-endothelial elements situated in the sheaths of arterioles. The cells of the cortex, therefore, are mesoblastic in origin. The relation of the function of the cortex to that of the sex glands is discussed.

Glasgow Medical Journal

33: 97-152 (Sept.) 1930

Teaching of Clinical Subjects in Final Year: Obstetrics. J. M. M. Kerr.—p. 97.
*Fähraeus's Test for Suspension Stability of Erythrocytes in Tuberculosis Practice. J. Crocket.—p. 106.
Two Recent Cases of Typhus Fever in Glasgow. C. M. Smith.—p. 117.

Fähraeus's Test for Suspension Stability of Erythrocytes.—Crocket believes that the sedimentation test is a simple and satisfactory means of determining the degree of toxemia resulting from the absorption of products of destruction. The test is particularly useful in tuberculosis; taken on several occasions, it helps one to assess the fitness of the patient and points to the probable course that the disease will take. The test should not be taken by itself but used along with other means of investigation, as its results are not parallel with the facts of the case in more than 85 per cent of the cases. The test is sufficiently simple and rapidly carried out to be adopted in the consulting room in general or dispensary practice.

Lancet, London

2: 561-616 (Sept. 13) 1930

Thermal Adjustment of Man and Animals to External Conditions. C. J. Martin.—p. 561.
Treatment of Asthma. W. R. F. Collis.—p. 567.
Pruritus Ani et Vulvae. L. F. R. Knuthsen and F. H. Humphris.—p. 569.
Abdominal Torsion of Omentum. M. J. Smyth.—p. 572.
Benzyl-Cinnamate Treatment of Pulmonary Tuberculosis. T. W. Wadsworth and J. T. Flanagan.—p. 576.
*Study of Yeasts by Complement-Fixation Test. K. Stone.—p. 577.
Severe Diphtheria: An Accessory Method of Treatment. B. A. Peters.—p. 579.
Septic Carriers. L. Grant.—p. 579.
Gonorrhea in Female Child. H. G. Broadbridge.—p. 580.
Portable Thermostat for Blood Transfusion. A. G. Shera.—p. 581.

Study of Yeasts by Complement-Fixation Test.—Stone asserts that by using a saline washing of the yeast as antigen the complement-fixation test can be applied in the identification of various members of the yeast and sporothrix groups. Specimens of thrush (*Oidium albicans*) obtained from ten successive cases gave identical results. By the complement-fixation test, all belong to one serologic type. Specimens of yeasts obtained from other sources have been studied and are shown to fall into five types. The sporothrices of Beurmann and Schenck appear to be identical, and quite distinct from yeasts so far studied. The sporothrices of Gougerot and Jeanseln appear to be identical with black yeasts obtained from other sources.

Practitioner, London

125: 353-448 (Sept.) 1930

Prognosis of Coronary Thrombosis. B. Parsons-Smith.—p. 353.
*Radiographic Study of Coronary Arteries: Coronary Thrombosis. E. W. Jones.—p. 370.
Angina Pectoris. M. Newman.—p. 388.
Diabetes in General Practice. M. O. Raven.—p. 402.
Disorders and Accidents of Athletes. R. S. Woods.—p. 411.
Treatment of Visceroptosis. H. C. Bull.—p. 421.
Vagaries of Tonsil. H. N. Barnett.—p. 429.
Vaginal Prolapse. W. M. H. McCullagh.—p. 434.
Serum Prophylaxis in Measles. R. F. C. Ward.—p. 438.

Radiographic Study of Coronary Arteries.—Jones describes his method of injecting the blood vessels of the heart with barium sulphate for purposes of radiologic study and then relates the results of his study of three cases. He says that the occlusion of the artery to the auriculoventricular node is a much more serious lesion than the occlusion of a branch of a similar size on the lateral aspect of the left ventricle. The larger the artery occluded, the greater is the liability to intracardiac thrombosis, aneurysm and rupture. Coronary anastomosis becomes much more extensive with increasing age. It is clear, therefore, that the coronary system of persons over 50 may be capable of adjusting itself rapidly to any sudden vascular alterations. Compensatory anastomosis is well developed when the rate of occlusion has been slow, and the myocardium is normal in those cases in which occlusion has been gradual. Low blood pressure tends to delay the opening of new anastomotic channels. Chronic interstitial myocarditis is a common occurrence prior to infarction and that is due to the coronary sclerosis that existed prior to the final occlusion. The presence of fibrosis is serious in that the finer arterioles are obliterated and thereby the anastomosis is much diminished. Canalization of the thrombus will assist to a certain extent in reestablishing the blood supply.

Archives de Médecine des Enfants, Paris

33: 519-582 (Sept.) 1930

*Cerebral Lesions in Whooping Cough. W. Mikulowski.—p. 519.
*Pneumonia in Early Infancy. E. Cassoute, R. Poinso and Zuccoli.—p. 546.
Eczema in Nurslings. R. Froyez.—p. 550.

Cerebral Lesions in Whooping Cough.—Mikulowski condemns the common opinion that whooping cough is merely a cough lasting six weeks and accompanied by vomiting. It is in his opinion one of the most frequently fatal diseases of childhood. The cough itself, in fact, is merely a defensive reflex reaction of the organism to the general infection; laryngeal contractions and convulsions often accompany, precede or even replace the cough. Whooping cough is often accompanied or followed by cerebral lesions, especially hyperemia, edema of the brain and the meninges and venous thrombosis. These cerebral lesions are the result of the toxic and infectious influence of the pertussis virus on the brain and the nervous and vascular system and are closely connected with pulmonary lesions arising from a center of inflammation in the lungs.

Pneumonia in Early Infancy.—Cassoute et al. are convinced that pneumonia occurs in nurslings. Typical cases present the same symptoms that accompany pneumonia in older patients. Although the helmet-shaped shadow revealed by roentgen examination is present also in chronic syphilitic pneumopathies, tuberculous pneumonia and pseudolobar bronchopneumonia, the syndrome and development of these diseases is so different that they can be easily distinguished from the typical forms of pneumonia. However, certain atypical or prolonged forms of pneumonia in which the evolution of the disease is longer and the symptoms more irregular are difficult to distinguish from pseudolobar bronchopneumonia or splenopneumonia, although their resemblance to the typical forms is marked.

Journal de Médecine de Lyon

11: 461-490 (Aug. 20) 1930

*Subhepatic Pain in Peptic Ulcer. A. Cade and M. Milhaud.—p. 461.
*Concealed Cancer of Esophagus. S. Bonnamour and P. Pichat.—p. 469.
Classification and Action of Cholagogues. M. Milhaud.—p. 477.

Pain in Pyloric and Duodenal Ulcers as Cause of Incorrect Diagnosis.—Cade and Milhaud show that the localization of the pain produced by pressure is of little pathog-

nomonic significance in the diagnosis of pyloric and duodenal ulcers, and in distinguishing between such ulcers and chronic cholecystitis. Three cases are cited in which pain was felt in the region of the gallbladder and in which other symptoms seemed clearly indicative of cholecystitis; but operation revealed duodenal ulcers. Unfortunately dyspeptic symptoms, gastric chemism and roentgen examination give no better results. The best advice that can be given, therefore, is not to forget that there is a possibility of pyloric or duodenal ulcer even though the syndrome indicates cholecystitis.

Concealed Forms of Cancer of Esophagus.—Bonnamour and Pichat point out that dysphagia is not always present in cancer of the esophagus, a fact not as yet well known because in most of these cases the diagnosis is made only on post-mortem examination. The principal forms of cancer of the esophagus without dysphagia are: (1) gastric; (2) cachetic and anemic; (3) bronchopulmonary; (4) mediastinal and laryngeal, and (5) metastatic. The diagnosis is difficult when dysphagia is absent; in fact, one must usually first consider the possibility of cancer of the esophagus and then look for symptoms, the most important of which are frequency, precocity and minimal amount of vomiting, hiccups, excessive secretion of saliva, pleuropulmonary signs and roentgenoscopic mediastinal obscurity.

Médecine, Paris

11: 565-640 (Aug.) 1930

Dolichocolon and Megacolon in Children. P. Nobécourt.—p. 577.
Infantile Acrodynia as Result of Encephalitis. E. Leenhardt and J. Chaptal.—p. 582.
Some Peculiarities of Typhoid Among Children. L. Babonneix.—p. 593.
Early Stages of Deficiency Diseases in Children. G. Mouriquand.—p. 598.
*Vaccinotherapy in Bronchial Pneumonia Among Children. C. Gardère.—p. 602.
Splenohepatic Tuberculosis in Nurslings. J. Baylac and L. Bounhoure.—p. 609.
Convergent Strabismus as Result of Hereditary Syphilis. P. Jeandelize.—p. 618.
Diphtheria in Children Vaccinated with Ramon's Anatoxin. G. Blechmann and A. Bohn.—p. 622.
Herter's Infantilism: Relations with Defective Digestion and Avitaminosis. G. L. Hallez.—p. 626.

Vaccinotherapy in Bronchial Pneumonia Among Children.—Gardère cites clinical observations and statistics to show that while vaccinotherapy in bronchopneumonia among nurslings does not noticeably affect the prognosis, nevertheless the mortality rate is slightly lowered by its use. It is well, therefore, to use vaccination regularly in addition to other methods of treatment in order to give children every possible chance for recovery. When vaccine cannot be secured, proteinotherapy in the form of subcutaneous injection is the best substitute.

Paris Médical

2: 181-224 (Sept. 6) 1930

Ophthalmology in 1930. G. Cousin.—p. 181.
Surgical Diathermy in Ophthalmology. A. Monbrun.—p. 187.
*Ocular Complications Caused by Vaccine. P. Toulant.—p. 190.
Otorhinolaryngology in 1930. L. Dufourmentel and A. Bureau.—p. 193.
Tracheotomy: Indications, Technic and Accidents. Rossert and Moatti.—p. 200.
*Indications for Operation in Acute Mastoiditis. G. Liébault.—p. 206.
Stomatology in 1930. C. L'Hirondel.—p. 209.
Diagnostic Value of Dental Dystrophies in Diseases of Children. R. C. Thibault.—p. 219.
Treatment of Severe Inflammation Caused by Lower Wisdom Tooth. M. Dechaume.—p. 222.

Ocular Complications Caused by Vaccine.—Toulant shows that dangerous complications may develop from infection of various parts of the eye with vaccine, since the eye does not participate in the general immunity acquired by previous vaccination. All who assist in the care of vaccinated children, and those who assist in the preparation of vaccine, should take special precautions to protect their eyes from contact with the serum itself or with infected material. The author mentions a severe case of keratitis which developed from a father's rubbing his eyes after caring for his child who had been vaccinated. The infection may be localized in the eyelids, the conjunctiva or the cornea. Vaccinal keratitis is the most dangerous of the three, frequently lasts from six months to a year, and often results in the complete loss of one or both eyes. No particularly successful treatment has yet been found to combat this infection. The best procedure, therefore, is for all those in contact with vaccine to exercise all possible care. Every one should have at hand a 1 or 2 per cent solution of silver nitrate, or an eye-wash of strong silver protein (10 per cent) or of chloramine (2 per cent) to be used immediately as an antiseptic if infection of the eye is suspected.

Indications for Operation in Acute Mastoiditis.—The three chief symptoms to observe in determining the advisability of a surgical operation in cases of mastoiditis are pain, temperature and discharge. If in a case of otitis, after the opening of the tympanum, the pain does not disappear in a short time but persists either steadily or spasmodically, and if palpation reveals soreness in the mastoid region, one has a right to suspect the development of mastoiditis. Although the pain alone is insufficient evidence, under these conditions the temperature curve is usually found to deviate from the normal either by a steadily increasing temperature, by failure of the fever developed earlier to disappear after the opening of the tympanum, or by a marked irregularity of temperature on different days or from morning to evening. The discharge also will probably show irregularities; in some cases it shows a marked increase while in others it stops and starts from one day to the next. Therefore, while no one of the three symptoms of pain, fever or irregularities in discharge is sufficient grounds for an operation, careful clinical observation of all three makes it possible to determine definitely when surgical intervention is necessary. Liébault makes a special point of the fact that the symptoms formerly considered decisive (retromastoid puffiness, then swelling in this region and later redness and fluctuation) appear too late to have any diagnostic value, since they indicate not that mastoiditis exists but that it has existed.

Presse Médicale, Paris

38: 1169-1184 (Aug. 30) 1930

*Treatment of Poliomyelitis with Serum of Former Patients. A. Netter.—p. 1169.
Preparation and Handling of Radioactive Bodies. F. Heim de Balsac, E. Agasse-Lafont and A. Feil.—p. 1171.
Proof of Existence of Traumatic Cholecystitis. G. Parturier.—p. 1173.
Perforations of Postabortal Infected Uterus. P. Monod and E. Kiraly.—p. 1175.
*Accidental Parasitism of Digestive Tube by Tyroglyphus Farinae. J. Quérangal des Essarts.—p. 1176.

Treatment of Poliomyelitis with Serum of Former Patients.—Netter advocates the use of serum of former poliomyelitis patients in the treatment of the disease. This serum is an efficacious means of preventing the evolution of poliomyelitis in its preparalytic stages and of arresting paralysis in the later stages. When former patients are difficult to find, a neutralizing serum can often be obtained from the blood of healthy adults who have been in contact with or near poliomyelitis patients, or even from the blood of adults from localities where cases of poliomyelitis have formerly existed.

Accidental Parasitism of Digestive Tube by Tyroglyphus Farinae.—Quérangal des Essarts, in the course of almost a thousand coprologic examinations, found *Tyroglyphus farinae* eight times. The occurrence of this acarid seemed entirely accidental and isolated, as further examinations of the stools of the same patients revealed no more traces of the parasite or its eggs. The author describes briefly the eight cases cited.

38: 1185-1200 (Sept. 3) 1930

Prognostic Value of Variations of Weight in Pulmonary Tuberculosis. J. Caussimon.—p. 1185.
*Origin and Practical Importance of Leukocytosis, Fever and Azotemia as Postoperative Reactions. D. Berceanu, M. Slatina and Albulesco.—p. 1187.

Importance of Leukocytosis, Fever and Azotemia as Postoperative Reactions.—Leukocytosis as a postoperative reaction occurs to a degree corresponding with the activity of the hematopoietic organs of the patient; this activity depends on the disease from which the patient is suffering, his age and his physical resistance. Postoperative leukocytosis causes companion reactions of fever and azotemia. From these facts Berceanu et al. draw the following conclusions: Intense leukocytosis with high fever and pronounced azotemia indicates general physical vigor and activity of the hematopoietic organs; hence an extremely favorable postoperative prognosis. Likewise

moderate leukocytosis with correspondingly mild fever and azotemia suggests a moderately favorable prognosis. Little or no leukocytosis may be taken as a warning of unfavorable postoperative evolution.

38: 1201-1216 (Sept. 6) 1930

*Tourniquet Capillary Resistance Test and Familial Serotherapy in Hemorrhagiparous Conditions. P. Chalier and R. Froment.—p. 1201.
Periodic Vomiting with Acetonemia. G. Leven and R. Leven.—p. 1202.

Tourniquet Capillary Resistance Test and Familial Serotherapy in Hemorrhagiparous Conditions.—Chalier and Froment describe a case of severe purpura in the course of ordinary diphtheritic angina revealed by a tourniquet capillary resistance test, which is invaluable in determining hemorrhagiparous conditions. In the treatment of such conditions the authors find human serotherapy extremely effective, especially when serum from the blood of members of the same family is used. Several of their patients who were suffering from hemorrhages both in diphtheritica angina and from other sources have been cured by subcutaneous injections of serum from the blood of a relative when injections of serum coated with gelatin and animal blood serum had been wholly inefficacious.

Revue Belge des Sciences Médicales, Louvain

2: 493-600 (June) 1930

*Advantages of Phrenicectomy Combined with Pneumothorax. C. B. Udaondo and A. Vadone.—p. 493.
*Pathogenesis and Treatment of Mega-Esophagus. P. Guns.—p. 505.

Advantages of Phrenicectomy Combined with Pneumothorax.—Udaondo and Vadone advocate the use of phrenicectomy as a subsidiary to pneumothorax in certain cases in which this method perfects and completes the action of the pneumothorax. This use of phrenicectomy has the following advantages: (1) prolonged duration of the pulmonary collapse, reabsorption of the insufflated air being balanced by the ascent of the diaphragm; (2) prolonged interval between insufflations; (3) ideal conditions for pulmonary reexpansion, because of the reduction of the pleural cavity, after abandoning the pneumothoracic cure, and (4) more complete pulmonary repose. However when the diaphragm is fixed by obliteration of the costodiaphragmatic sinuses, the operation is contraindicated because the ascent of the diaphragm is impossible. For this reason it is best to proceed first with the pneumothorax and then ascertain either by roentgen examination or by pleural pressure whether a phrenicectomy is indicated.

Pathogenesis and Treatment of Mega-Esophagus.—Guns conducted a series of experiments to determine the pathogenesis of mega-esophagus. He found that the source of this disturbance is in the autonomic nervous system. A phrenocardiospasm is first produced. This is replaced by a cardiospasm under the mechanical influence of the weight of the substances in the esophagus. As the mass directly above the seat of the spasm increases, it fatigues the diaphragmatic muscles and causes the contracture to take place wholly in the cardia. This mechanical action is amplified by the peristalsis. There have been many opinions as to treatment. However, at present most physicians prefer to practice dilation of the cardia to 5 or 6 cm. in diameter by means of bougies. Guns has achieved favorable results by using strychnine along with dilation.

Chirurgia degli Organi di Movimento, Bologna

15: 1-186 (July) 1930

Congenital Pseudarthrosis of Tibia. M. Camurati.—p. 1.
*Arthritis Due to Bacterium Coli-Commune. E. Codeleoncini.—p. 163.
Remote Results of Free Autoplastic Bone Transplants in Pseudarthrosis of Femoral Diaphysis. F. Melina.—p. 174.

Arthritis Due to Bacterium Coli-Commune.—Codeleoncini's patient, a coachman, aged 67, was a man whose general health was bad, which explains possibly in part the unusual site of the colibacillary infection. The patient developed a pain of moderate intensity in the left knee, which appeared and disappeared without evident cause. The pain increased later but retained the same character. The part was neither red nor swollen. The patient had recently lost from 8 to 11 pounds (3.6 to 5 Kg.). Later a slight edema of both lower limbs developed. In the urine a considerable quantity of colibacilli were found. The clinical diagnosis was subacute arthritis of the left knee and tumor of the prostate. The swelling involved later the lower third of the thigh and the uppermost third of the leg. The normal depressions of the patellar and parapatellar regions had, in part, disappeared. Roentgen examination of the knees revealed nothing pathologic. A month after admission to the hospital, the cavity of the left knee was opened and about 300 cc. of thick, yellow and thready pus was evacuated. Numerous bacilli were found, which were identified as colibacilli. The patient was somewhat relieved; the pain nearly disappeared. Two days later there was a marked rise of temperature with chills and the knee again became painful. About 100 cc. of the same kind of pus was evacuated. The bacteriologic examination gave the same results as before. Seven weeks later, a general intoxication due to cancerigenic metastases and altered metabolism developed and death occurred three months after the first evacuation. In view of the small number of cases that have been reported, the author hesitates to advance any theory to explain how colibacilli became localized in the left knee but thinks the low state of health of the patient favored such localization. He is inclined to assume that, owing to the ubiquitous nature of colibacilli, such infections may not be as rare as is supposed. As for the treatment of arthritis due to colibacilli, surgical and orthopedic methods are most important. Also autovaccinotherapy, when indicated and possible to carry out, if begun promptly and followed up with rapidly increasing doses, is valuable. Of late, a great deal is said about d'Herelle's bacteriophage. In France, Fisch's vaccine and Vincent's anticolibacillary serum are much used. Antiseptics, given intravenously (methenamine, 40 per cent solution), or applied locally (for example, compound solution of iodine or solution of chlorinated potassium carbonate [Javel]) sometimes give good results.

Clinica Ostetrica, Rome

32: 449-536 (Aug.) 1930

*Biologic Diagnosis of Pregnancy by Aschheim-Zondek Method. G. Addessi.—p. 449.

Diagnosis of Pregnancy by Aschheim-Zondek Method.—Addessi, after referring to other methods proposed for the biologic diagnosis of pregnancy, considers the value of the Aschheim-Zondek test. From the application of the test to forty-eight pregnant women, in various months of gestation, there were forty-seven positive results and one negative result. Of eight extra-uterine pregnancies, six gave a positive reaction and two a negative reaction. In sixteen puerperal women it was demonstrated that the hormone of the anterior lobe of the hypophysis is eliminated with relative rapidity, for after the sixth day since the birth the reaction has always been negative. In twenty-four controls consisting of women of various ages with various gynecologic disorders, inflammatory conditions of the adnexa and parametrium, healthy men of various ages, and others, the result of the test was always negative. The author emphasizes the importance and the utility of the test, especially in those cases of initial pregnancy in which the clinical examination ofttimes does not furnish sure results.

Giornale di Clinica Medica, Parma

11: 677-764 (July 20) 1930

*Cervical Spina Bifida Occulta and Its Late Clinical Symptoms. G. Reggiani.—p. 677.
Subcutaneous Leiomyofibro-Angiomatosis: Case. C. Malossi and G. Gelli.—p. 729.

Late Clinical Symptoms of Cervical Spina Bifida Occulta.—Observations in a case of amyotrophic paralysis of the upper limbs in a man, aged 48, in which the roentgen examination revealed a split in the seventh cervical vertebra, furnished Reggiani the occasion to survey and discuss the so-called late syndromes of cervical spina bifida occulta. After describing and discussing the diagnostic aspects of the case, he considers observations made by others in cases of cervical spina bifida occulta. Cases in adults are discussed in their clinical manifestations and in their genesis. From comparisons drawn between the observations previously made and his own case, the author concludes that a malformation of this nature does not present peculiar clinical aspects. He admits, however, the possibility of syringomyelic syndromes, paralysis and muscular atrophy being among the anomalies of primary develop-

ment. Having found in the observed case data that pointed to syphilitic infection, the author thinks that such a factor may intervene as an occasional cause in the determination of the syndromes observed in spina bifida occulta in the adult.

11: 765-846 (Aug. 10) 1930

*Skin Changes and Nervous Disturbances Due to Acute Poisoning from Illuminating Gas. A. Biancalani.—p. 765.
Observations on a Series of Cases of Pericarditis. C. Zerman.—p. 790.

Disturbances Due to Poisoning from Illuminating Gas.—Biancalani reports that in the case studied by him the palpebral ptosis, whether it is brought into relation with central hemorrhages or with peripheral changes, disappeared in a few days. The partial paralysis, however, in the field of the median and the radial nerves, persisted five months after the poisoning and was showing a slight improvement as the result of suitable electrotherapeutic applications.

Pediatria, Naples

38: 585-640 (June 1) 1930

*Arneth and Schilling Formulas in Most Common Exanthematic Diseases and in Diphtheria in Infants. C. Nervi.—p. 593.
Babinski Reflex in Acute Anterior Poliomyelitis. G. Jona.—p. 609.
Mixed Osteohypertrophic Nevus of Left Maxilla, Chin, Neck and Left Half of Tongue: Case. P. Lacchia.—p. 617.
Scurvy in Infant: Case. G. Marcelli.—p. 626.

Arneth and Schilling Formulas in Exanthematic Diseases and Diphtheria.—Nervi made both the Arneth formula and the Schilling blood count in seven normal children as controls and in four groups of children with diphtheria, scarlet fever, measles or varicella. The blood for examination from the stricken children was taken in one group at the peak of the disease and in the other group at three different periods (at the peak of the disease, at the descending period from the crisis to the convalescence and in late complete convalescence). The author presents his results in tables. The current theories are briefly reviewed. In normal children the figures given by the Schilling blood count agreed with those of the Arneth formula. In the Schilling blood count the neutrophils are divided into two groups: neutrophils with only one nucleus and polymorphonuclear neutrophils. While modifications of the neutrophilic picture were observed in the Arneth formula, the author observed that, in infectious diseases, cells of one or of two nuclear segments predominate, that is, there is a shifting of the neutrophils to the left. This shift curve has no relation with the seriousness of the condition and it is more marked during the period from the crisis to the convalescence, while it returns almost to normal in complete convalescence. The author considers that in infectious diseases the bone marrow is under the influence of a toxic or infective stimulus which compels a rapid production of young cells. The predominance of young cells is more marked in scarlet fever, is less in measles, is still less in diphtheria and is almost insignificant in varicella. In the determination of the Schilling blood count the author considers the young forms of neutrophils as regenerative cells that improve the condition of the blood. In infectious diseases, young forms of the type of the regenerative cells with a single nucleus predominate in the circulation during the acute period. In the period from the crisis to the convalescence, an intense regeneration of the blood takes place, while few myelocytes and metamyelocytes appear in the circulation, and in complete convalescence the blood returns to normal or almost normal. The author could not find even in the most serious forms of infections a high percentage of immature cells. He concludes that the value of the neutrophilic picture of Arneth is more theoretical than practical in the diagnosis and prognosis of infectious diseases. The formula does not point out either the nature or the intensity of the stimulus of the bone marrow. The Schilling blood count gives a clearer idea for the interpretation of the picture given by infectious diseases, but, if the grave symptomatology of these diseases is taken in consideration, even the Schilling blood count is of but little value. However, the knowledge derived from these two formulas on the conditions of the blood during infectious diseases should be taken as the basis for a qualitative and quantitative estimation with regard to the rôle assumed by the bone marrow and the peripheral blood in the evolution of several infections.

38: 697-752 (July 1) 1930

Changes of Sugar Metabolism in Peptone Shock with Circulatory Insufficiency. E. Schiff, H. Eliasberg and A. Mazzeo.—p. 697.
*Rhythm and Action Current of Heart in Typhoid in Children During Shock Caused by Antityphoid Vaccine. M. Gerbasi.—p. 709.
Anemia and Idiopathic Hypertrophy of Heart in Early Childhood: Case. E. Frola.—p. 733.

Rhythm and Action Current of Heart in Typhoid During Shock Caused by Antityphoid Vaccine.—Gerbasi studied the behavior of the rhythm and action current of the heart during the shock caused by the intravenous injection of lysed typhoid vaccines in fourteen children with typhoid, aged from 2 to 13 years. All the patients recovered. Electrocardiograms were taken immediately before the injection, during the crisis of the reaction caused by the vaccine and after the disappearance of the reaction. In seven of the children the electrocardiograms were repeated during complete convalescence when the general condition of the patients had markedly improved. The administration of any medicament that could in any way interfere with the results, or act even indirectly on the heart, was suppressed during a period preceding and including the observations. It was a constant observation that after the intravenous injection of typhoid vaccine the waves in the electrocardiograms were smaller in cases in which the activity of the heart was more seriously affected than in those cases in which the functioning of the heart was less seriously impaired. That is, in the first group of patients the phenomena of generation of the action current of the heart (or nervous stimulus) was less intense than in the former group. Examination of the electrocardiograms proved that the shock that follows the intravenous injection of antityphoid vaccines causes an activation of the electromotive force of the heart. It also causes alterations of different form and intensity of the functions of the heart. These alterations are in relation with the more or less serious condition in which the heart is under the influence of the disease. They may be overcome when the functioning of the heart is reasonably good, but otherwise they may endanger the patient's life. Hence the advisability of considering the alterations caused by typhoid not exactly as a contraindication for the use of intravenous injections of antityphoid vaccines, when they have not caused serious disturbances in the functioning of the heart, but as a clear indication of the caution necessary in the use of the vaccines in patients in whom the functioning of the heart is impaired.

Riforma Medica, Naples

46: 1109-1148 (July 14) 1930

Lactic Acid Content of Blood in Normal and in Pathologic Conditions. M. Calabresi and W. Schwarz.—p. 1111.
Deviation of Complement with Spirochetal Antigen in Syphilis. A. Versari.—p. 1115.
Physiology of Visceral Innervation in Man: Sympathetic Nerve and Gastric Sensitiveness. G. Pieri and M. Lapenna.—p. 1117.
*Rigid Fixation of Jaws Due to Forward Luxation: Arthroplasty. A. Battista.—p. 1122.

Rigid Fixation of Jaws Due to Forward Luxation: Arthroplasty.—Battista describes in detail his operation on a boy, aged 9, who, as a result of a fall from a wall six feet high, in which he struck on his chin, developed a rigid closed fixation of the jaws due to forward luxation of the mandible. The author made a vertical incision beginning a finger's length from the tragus. Crossing the zygomatic arch, the incision extended 5 cm. in the temporal region. A second (transverse) incision was made, starting from a point from which it formed a right angle with the first incision and running along the lower border of the zygomatic arch. As the soft parts were reached they were dissected downward so as to avoid the facial nerve; thus the bony skeleton was reached. The displaced head of the condyle, held tightly in the zygomatic arch at about the junction of the temporal and the upper maxillary processes, was easily recognized by its different shade of color, due to its enveloping cartilage. The neck of the condyle was isolated in order to liberate it from the newly formed tissue—partly fibrous and partly bony. This maneuver, when completed, allowed the author to pass behind it the curved portion of a spatula to protect the internal maxillary artery. He proceeded then with the resection of the condyle and the upper end of the neck. The lower jaw could now be easily mobilized, as the articulation of

the opposite side offered only slight resistance. To complete the intervention, the operator resected a rectangular flap of the temporal aponeurosis, with its base in the zygomatic arch, and inserted it in the breech, fastening it loosely with a few sutures about the neck of the condyle, performing thus a partial arthroplasty after the method of Murphy. The tissues were reconstructed and the skin incision was closed, but a narrow strip of gauze was left in the wound as a tampon. The author was ready to perform a tracheotomy in case grave asphyxia developed. The postoperative course was uneventful. On the third day the small tampon was removed, and the wound healed rapidly. For a few days only, the mouth was found open from time to time; then, soon, the patient began to masticate some food—preferably toast. To protect the blood vessels, the author found it useful in his case to use instruments with a rather sharp curve in order to overcome the differential level of the two planes—the surface and the deep-lying tissues. It is important that the curved instrument can be easily inserted behind the condyle and constitutes a strong resistance in the resection procedure. It is useful, too, to apply pressure to the other end of the instrument, after the manner of a lever.

46: 1149-1188 (July 21) 1930

Pseudotuberculous Pharyngeal Febricula and Pseudotuberculous Rhinopharyngobronchitis. U. Baccarani.—p. 1151.
Experimental Researches on Variations in Electrolytes in Normal Skin and in Edematous Skin. G. Santojanni.—p. 1155.
*Nonsurgical Treatment in Ureteral Calculosis. P. Pieraccini.—p. 1156.
Block of Right Branch of Bundle of His, with Auricular Fibrillation. M. Sorrentino.—p. 1161.

Results of Nonsurgical Treatment in Ureteral Calculosis.—Pieraccini concludes: Before subjecting to surgical intervention a patient who presents a calculus wedged in the ureter—especially if the calculus is small and localized in the lower portions of the duct, and is not associated with serious pyelo-ureterovesical inflammatory conditions, it is always indicated to resort to nonsurgical instrumental therapy. Even if the disorder presents all or some of the aforementioned characteristics, one may still hope for a spontaneous emission of the concrement by the administration of diuretics and by subjecting the patient to an appropriate diet. In many statistics in which the percentage of cures effected by instrumental nonsurgical treatment is high, no doubt many cases are considered as successes in which elimination of the calculi would have taken place spontaneously. According to the statistics of Taddei, in cases of recent involvement in which the patients are carriers of small, noninfected calculi in a low position in the ureter, spontaneous expulsion occurs in about 50 per cent of the cases in from six days to one month from the discharge of the patient from the clinic, which interval corresponds closely to the interval between the day on which ureteral catheterization was performed and the day on which the stone was passed.

Siglo Médico, Madrid

86: 57-80 (July 19) 1930

*Functional Synergy of Mastication and Elevation of Upper Eyelid. M. Marín Amat.—p. 57.
*Treatment of Anthrax. F. Jofré de Villegas.—p. 60.
Left-Sided Strangulated Inguinal Hernia Caused by Exertion. V. Fidalgo Tato.—p. 64.

Functional Synergy of Mastication and Elevation of Upper Eyelid.—Marín Amat reports the case of a child, aged 8, whose parents (in whom there was no consanguinity) and six brothers and sisters were normal. The general physical and mental condition of the child was normal, except for a typical synergy of mastication and elevation of the right upper eyelid. The abnormality was congenital, unilateral and accompanied by total ptosis of the eyelid. The eye opened only while the child either opened his mouth or moved his lower jaw to the left. When the eye was opened a paralytic covergent strabismus (caused by paralysis of the external rectus) was observed. The acuity of vision was normal in both eyes. The pathogenesis and treatment of this condition are unknown. An origin, similar to that of other synergies (in which a functional association of the cerebral nerves has been held responsible for the condition) is suspected in these cases. The author reviews the literature and makes reference to a personal observation (previously reported) in which the inverse phenomenon existed (the eye was constantly open and closed only when the mouth was opened). Two hypotheses are given to explain the phenomenon: (1) the intervention of motor fibers arising from the masticator nerve (in the motor portion of the trigeminus), by exercising an abnormal influence on the levator palpebrae superioris muscle, and (2) the presence of an anastomosis between the nuclei of origin of both cerebral nerves between which the functional synergy exists. The only scientific proof is the electrical exploration of the oculomotor nerve in its entire course. The most plausible explanation of the case under discussion seems to be that the functional synergy between the levator palpebrae superioris muscle (innervated by the oculomotor nerve) and the depressor muscle of the inferior maxilla (innervated by the masticator nerve) is caused by the presence of an abnormal peripheral anastomosis between the oculomotor and the masticator nerves.

Treatment of Anthrax.—Jofré de Villegas says that success in the treatment of anthrax depends on early diagnosis and treatment. As soon as anthrax is diagnosed a crucial incision with the thermobistoury is made, giving some points of cauterization around the anthracic area to limit the edema. At the same time 30 cc. of antianthrax serum is given and the dose is repeated the next day. These two first injections of antianthrax serum should be given intravenously to avoid the rapid propagation of the infection in the blood. From the third day of the treatment on, the dose of antianthrax serum should be reduced to 10 cc. daily for the next four days and should be given subcutaneously. The patient should receive also tonic and stimulant drugs to maintain him in the best possible condition. The author has treated eighteen persons with anthrax by the combined treatment of thermocautery and anthrax serotherapy and twelve by the administration of antianthrax serum alone. In each of the groups only one patient died. The author considers that the use of serotherapy should be generalized. By this method the suffering inherent to cauterization and the presence of scars may be avoided. The mortality rate is small (8 per cent in the author's cases).

Deutsche medizinische Wochenschrift, Berlin

56: 1335-1378 (Aug. 8) 1930

*Treatment and Prognosis in Cerebral Abscess. W. Uffenorde.—p. 1335.
Practical Significance of Differentiation of Types in Paratyphoid Group. E. Boecker and F. Kauffmann.—p. 1339.
Effect of Mixture of Insulin and Sodium Desoxycholate on Blood Sugar Curve. R. Kühn.—p. 1341.
Prophylaxis of Diphtheria in Institutions by Means of Loewenstein's Diphtheria Ointment. E. Urbanitzky.—p. 1342.
*Counteracting Fatal Hemorrhages During Puerperium. K. Heim.—p. 1344.
Orthopedic and Medicinal Treatment in Disorders of Vertebral Column Accompanied by Stiffness. E. Bettmann.—p. 1347.

Treatment and Prognosis in Cerebral Abscesses.—According to Uffenorde, the pathologic anatomy in abscesses of the brain shows that during their treatment complications may be caused by the virulence of the pathogenic micro-organisms, by a progressive encephalitis or by perforation into the ventricle. These complications occur not only in otogenic and rhinogenic but also in traumatic abscesses. The author discusses le Maitre's method and then describes his own procedure. He thinks that his method of opening the abscess and of careful drainage is the more advantageous. He employed it in twenty-four patients, fourteen of whom recovered.

Counteracting Fatal Hemorrhages During Puerperium.—Heim points out that the prevention of fatal hemorrhages is one of the most serious problems in obstetrics. There is danger of fatal hemorrhage in placenta praevia, in premature detachment of the placenta, in lacerations and in atony of the uterus. The author reports the clinical histories of two cases of atony with uterus arcuatus and with lacerations of the cervix uteri. As a result of delayed treatment, death from hemorrhage was imminent. However, the patients were saved by a blood transfusion and by the simultaneous extirpation of the uterus. Occasionally there occur cases of atony in which the conservative methods, even if applied early, bring only temporary improvement. In such instances it is often difficult to decide whether blood transfusion alone will be sufficient or whether the exclusion of the source of hemorrhage by means of total extirpation is necessary. The author thinks that in such cases the vaginal method for removal of the uterus is advisable.

56: 1379-1422 (Aug. 15) 1930

Diagnosis and Treatment of Nervous Disorders in Children. C. Pototzky.—p. 1379.
Influence of Female Pituitary Preparation on Genitalia of Male Rats. H. Boeters.—p. 1382.
Observations on Carbon Dioxide Poisoning in Mine Disaster at Neurode. G. W. Parade.—p. 1385.
*Postmenopausal Hemorrhages as Sign of Cancer of Uterus. E. Zweifel. —p. 1388.
*Indirect Injuries from Roentgen Rays. H. Lossen.—p. 1391.
Elimination Pyelography with New Contrast Medium. H. Bronner and J. Schüller.—p. 1393.
*Disorders Caused by Electric Current That Develops When Two Different Metals are Used in Dental Work. A. Lippmann.—p. 1394.

Postmenopausal Hemorrhages as Sign of Cancer of Uterus.—A review of the literature and observations at the women's clinic in Munich convinced Zweifel that about 80 per cent of postmenopausal hemorrhages are caused by cancer. He stresses that, in all cases of postmenopausal hemorrhages, cancer of the genitalia should be thought of and a thorough gynecologic examination should be made. Only when such an examination reveals a different cause for the hemorrhage, may it be concluded that cancer is not present. If not caused by malignant growths of the genitalia, the hemorrhages may be due to erosions, polypi or decubital ulcers. Such causes can be detected by the general practitioner. Whenever the diagnosis is not clear, exploratory curettage should be done. Thorough examination is also necessary in hemorrhages during the menopause because about one third of these are likewise due to cancer. In the conclusion the author emphasizes that in cases of menopausal or postmenopausal hemorrhage it is unpardonable negligence on the part of the practitioner to omit the gynecologic examination. By an expectant attitude and medicinal treatment much valuable time may be lost, whereas an early diagnosis would save the patient's life.

Indirect Injuries from Roentgen Rays.—Lossen reports the case of a man who had been given roentgen treatment on account of psoriasis. Neither during nor after the irradiations did roentgen ulceration become manifest. However, about two years later, the man sustained an injury on the right elbow and an ulcer appeared which represented the aspects of a typical roentgen ulcer and required three years for healing. Some time after that there developed without apparent cause a roentgen ulcer on the left arm. The patient commenced a lawsuit against the physician who had given the roentgen treatment. The first question to be answered was whether the physician was justified in employing roentgen therapy. To this a positive answer could be given, because in psoriasis that is refractory to other treatments roentgen irradiation is considered advisable by most authorities. Investigations regarding the method employed by the physician revealed that the technic also had been correct. The author thinks that indirect roentgen injuries are due to a hypersensibility to roentgen rays on the part of the patient. He then discusses various factors that might be the cause of the hypersensibility. In the conclusion it is pointed out that the causes of such indirect roentgen injuries cannot always be completely determined. Then the author stresses that the patient has to be given instructions regarding the care of the skin after irradiations. When roentgen injuries develop, a specialist should be consulted immediately. The German Roentgen Society makes a special study of the prevention of roentgen injuries.

Disorders Caused by Electric Current That Develops When Different Metals are Used in Dental Work.—Lippmann gives the clinical histories of two patients who had severe headaches, felt weak, were nauseated, lacked appetite, had increased flow of saliva, complained of a burning sensation on the tongue, and found that all foods had a metallic taste. The first patient was toothless. At first she had one gold prosthesis and one india-rubber prosthesis and she felt well. However, when the india-rubber prosthesis broke, it was replaced by one of tin and now the disturbances became manifest. The true cause of the disorders was at first not recognized and a renal disturbance was thought of. The patient remained in bed and did not wear her prostheses and the symptoms disappeared. However, when the prostheses were again replaced the same symptoms recurred. When the true cause was recognized the one prosthesis was again replaced by an india-rubber one, and now the patient gradually recovered. In the second patient a mixture of metals, namely, copper, zinc and lead, had been used for bridge work but they had been incompletely fused. Some copper and zinc crystals remained separate and therefore the alloy did not act as one metal but as two and an electric current developed. The author concludes that if two different metals are present in the mouth an electric current develops. This causes nervous and various other disorders. By electrolysis small portions of the metals disintegrate and it is probable that copper and zinc in ionic form may cause chronic poisoning.

56: 1423-1466 (Aug. 22) 1930

Prognosis of Puerperal Pyemia. R. Schröder.—p. 1423.
*Investigations on Carotin and Vitamin A. L. K. Wolff, J. Overhoff and M. van Eckelen.—p. 1428.
Clinical Aspects of Vaccination Encephalitis. A. Eckstein, H. Herzberg-Kremmer and K. Herzberg.—p. 1429.
*Is Paroxysmal Tachycardia an Allergic Disease? R. Luria and Wilensky. —p. 1430.
Significance of Sympathetic Inhibitions in Skin for Development of Secondary Syphilitic Skin Eruptions. E. F. Müller and E. Delbanco. —p. 1433.
Multiple Tuberculous Foci in Vertebral Column. H. Berger.—p. 1435.
Diagnosis and Therapy of Disorders of Acoustic Nerve. G. Claus.—p. 1436.

Investigations on Carotin and Vitamin A.—Wolff et al. made animal experiments that confirmed the observations of other investigators, who found that disorders which result from a lack of vitamin A may be counteracted by carotin. However, certain reactions indicated that carotin and vitamin A are not identical. The authors describe the methods that make it possible to separate the vitamin A content from carotin. They determined the vitamin A content and the carotin content in several vegetable and animal products, and they came to the conclusion that in plants vitamin A is either entirely absent or occurs in minute quantities that cannot be detected. The source of vitamin A is carotin. The latter is changed by the animal organism into vitamin A. In animal products, both substances can be detected. Tests showed that egg yolk and butter contain both carotin and vitamin A. Liver and cod liver oil, however, contain almost exclusively vitamin A.

Is Paroxysmal Tachycardia an Allergic Disease?—Luria and Wilensky describe the case of a woman with paroxysmal tachycardia. The anamnesis revealed that the attacks were especially severe following ingestion of large amounts of sweets, particularly raisins and new honey. When the patient was put on a lactovegetarian diet from which all sweets were excluded, the attacks of tachycardia ceased. Later the patient was given honey cake with raisins, and an attack followed. When she was given 100 Gm. of old honey tachycardia did not develop, but the ingestion of 200 Gm. of raisins was followed by a severe attack. The patient was ordered to abstain entirely from raisins and now the attacks did not recur. In order to determine whether the woman was hypersensitive to sweets or carbohydrates, cutaneous tests were made with starch, apples, honey and raisins. Control tests were made on a normal person. Repeated tests revealed that the patient was hypersensitive to extracts from raisins and honey. In the conclusion the authors point out that the observations in this case indicate that perhaps some cases of paroxysmal tachycardia are due to allergy. They recommend the further investigation of this problem.

Klinische Wochenschrift, Berlin

9: 1529-1568 (Aug. 16) 1930

Extrarenal Elimination of Water and Its Clinical Significance. H. Heller.—p. 1529.
*Disturbances in Carbohydrate Metabolism in Exophthalmic Goiter. B. Kugelmann.—p. 1533.
Symptomatic and Etiologic Treatments in Sympathetic Functional Disturbances: Pathology and Therapy of Itching. W. Brack.—p. 1534.
Lymphogranulomatosis Inguinalis Identical with Condition Formerly Designated as Strumous Buboes. W. Frei.—p. 1537.
Nature of Allergens: Specificity of Pollen Allergens. L. F. Loeb.—p. 1539.
Experiments on Serodiagnosis of Cancer: Use of Step Photometer in Kahn's Albumin A Reaction. W. Bachmann.—p. 1540.
Comparison of Reactions After Kahn's Method of Determination of Albumin A with Step Photometric Reading and After Botelho's Test Performed According to Two Different Methods. W. Bachmann and F. Schmidt.—p. 1541.
Mode of Dissemination of Primary Intestinal Actinomycosis. H. Nathan. —p. 1543.
Changes in Ion Groups in Serum During Eclampsia. H. Rossenbeck. —p. 1545.
*Treatment of Morphinism with Combined Administration of Insulin and Dextrose. G. Anton and J. Jacobi.—p. 1547.

Lipodystrophy in Children Receiving Insulin Injections. R. Priesel and R. Wagner.—p. 1548.
Specific Dynamic Action and Adiposogenital Dystrophy Before and After Treatment with Hypophyseal Preparations. F. Halla.—p. 1549.

Disturbances in Carbohydrate Metabolism in Exophthalmic Goiter.—Kugelmann performed levulose tolerance tests on healthy persons and on patients with exophthalmic goiter. In the morning the blood sugar content was tested while the persons were still fasting. Then 100 Gm. of levulose was administered and blood sugar tests were made first after fifteen minute intervals and then after thirty minute intervals. In healthy persons the blood sugar increases slightly but within two hours has again reached the normal level. In patients with exophthalmic goiter the increase is considerable and even three hours after the administration of the levulose the blood sugar is still much higher than normal. On the basis of his observations the author concludes that in the liver in thyrotoxicosis the glycogen depots are depleted, and the liver is no longer capable of changing large quantities of levulose into dextrose and of storing the dextrose. This demonstrates that in exophthalmic goiter there exists a functional disturbance of the liver, which becomes manifest in the pathologic behavior of the intermediate carbohydrate metabolism.

Treatment of Morphinism with Combined Administration of Insulin and Dextrose.—Since several investigators had detected an abnormal carbohydrate metabolism in morphine addicts, namely, a reduced blood sugar content, Anton and Jacobi attempted to treat morphinism with insulin and dextrose. They give case reports of three morphine addicts. Two or three times daily the patients were given 10 or 15 units of insulin. The insulin injections were combined with the peroral administration of 50 Gm. of dextrose. The result of the treatment was that the abstinence symptoms were negligible or were entirely absent, the patients gained in weight and strength and the psychic equilibrium was quickly restored. The authors point out that observations on only three cases do not permit a final evaluation of the method. However, the good results obtained in these cases justify the further investigation of the treatment.

Medizinische Klinik, Berlin

26: 1175-1212 (Aug. 8) 1930

Clinical Aspects of Allergic Diseases. H. Kämmerer.—p. 1175.
*Therapy of Bronchial Asthma. Woldrich.—p. 1179.
Diagnosis of Ovarian Tumors. Benthin.—p. 1180. C'td.
Radio-Ulnar Synosteosis. H. Hefter.—p. 1184.
Late Injuries in Children After Forceps Delivery and After Version. H. Krukenberg.—p. 1186.
Pathogenesis of Optic Aura. H. Hoff and T. Hoffmann.—p. 1087.
Plastic Surgery of Nasal Septum for Saddle Nose. O. Heinemann.—p. 1188.
Nature of "Secondary" Septic Focus. H. Bonheim.—p. 1189.
Treatment of Infants Borne by Women Addicted to Morphine. R. F. Weiss.—p. 1192.
Simplified Conglobation Reaction: Its Acceleration by Means of Centrifugation Method. R. Müller.—p. 1193.
Dry Bed for Infants. Sepke.—p. 1195.

Therapy of Bronchial Asthma.—According to Woldrich the therapy of bronchial asthma should be based on a careful anamnesis. Then skin tests should be made in order to determine the specific allergy. In the majority of cases that came under the author's observation, the anamnesis revealed attacks of pneumonia and chronic bronchitis. Cutaneous tests with a mixture of staphylococci and streptococci gave positive results in 63 per cent of the cases. Other patients showed hypersensibility to dust, pollen, hairs of animals, climatic conditions and foods. The investigations proved that in the majority of cases vaccine therapy was necessary. The author prepared the vaccines either from the sputum or from the nasal secretion. In 37 per cent of the cases the cure was complete and in 45 per cent improvement was noted. In 18 per cent there was no change. Autovaccines brought better results than other vaccines. In cases of dust hypersensibility, attempts were made to remove the cause and the results were generally favorable.

26: 1213-1246 (Aug. 15) 1930

*Protein Therapy in Angina Pectoris. R. Schmidt.—p. 1213.
Nervous Sequelae of Traumas. M. Reichardt.—p. 1214.
Diagnosis of Ovarian Tumors. Benthin.—p. 1216. C'cn.
Relation Between Migraine and Allergy. L. Hahn.—p. 1219. C'td.
Course of Fever in Malariotherapy of Syphilitic Disorders of Central Nervous System. F. Puntigam.—p. 1221.
Various Methods for Treatment of Leukorrhea. A. W. Bauer.—p. 1223.
Clinical Experiences with Guttadiaphot Method According to Meyer-Bierast-Schilling. P. von den Trappen.—p. 1225.
Experiences with Meinecke's Clarification Reaction. E. Kadisch.—p. 1226.
Abdominal Symptoms in Hemophilia. G. Scherk.—p. 1227. C'td.
One Year's Experience with Chiniofon Preparation in Treatment of Leukorrhea Caused by Trichomonas Vaginalis. M. Rodecurt.—p. 1228.

Protein Therapy in Angina Pectoris.—Schmidt is of the opinion that in cases of angina pectoris the favorable effects of muscle extracts and also of heart hormone preparations are not due to hormonal action but represent a protein therapy. The author discusses two forms of angina pectoris. In the first form, which is caused by thrombosis of the coronary arteries, protein therapy is not effective. The second form, designated by the author as "exertion" angina, differs from the first in symptomatology as well as in pathogenesis. Great fear, manifestations of cardiac insufficiency and decrease in the blood pressure are absent in this exertion angina and the pulse is usually especially strong. Observations in many cases of exertion angina convinced the author that it is a sympathetic neuralgic condition that increases as the result of abnormal vasomotor reflexes. The protein therapy influences the sympathetic neuralgia as well as the vasomotor disturbance. The author is of the opinion that in many instances of exertion angina the cardiac plexus may show anatomic changes and it may also be caused by such conditions as syphilis, tuberculosis, nicotinism, metabolic disorders with glycosuria and concrement formations in the urinary and biliary tracts, endocrine disorders, chronic affect conditions, and mental strain. Because of these conditions other symptoms such as sciatica, lumbago, arthralgia and myalgia are often noted. Between the attacks of angina pectoris the chronic neuralgic condition of the cardiac plexus becomes manifest in points that are sensitive to pressure. In the highly sensitive cardiovascular plexus even minor conditions may cause a sympathetic neuralgia. Although neuralgic conditions can be influenced by protein therapy, there is usually a negative phase during which the painfulness increases temporarily. That abnormal vasomotor reflexes are involved in exertion angina is proved by such symptoms as urticaria, wheal reflex, Quincke's edema, chills and spasmodic yawning. Meteorological conditions such as changes in atmospheric pressure, electrical storms and fog as well as psychic factors influence the vasomotor action. This indicates that a certain relation exists between constitutional asthma and exertion angina. And since the beneficial influence of protein therapy has been demonstrated in constitutional asthma, it may be expected that the abnormal vasomotor reflexes in exertion angina may likewise be influenced by protein therapy. The author's experiences with protein therapy are limited to a small number of cases and he therefore refrains from a final evaluation but he recommends this therapy for further investigation. He thinks that complications from protein therapy may be avoided by the use of glyceryl trinitrate.

Münchener medizinische Wochenschrift, Munich

77: 1353-1394 (Aug. 8) 1930

Dysraphic Anomalies as Pathogenic and Pathoplastic Factors. E. Guttman and J. Lange.—p. 1353.
Indications for Resection of Nasal Septum. H. Richter.—p. 1354.
*Disturbances in Vertebral Column After Amputation of Thigh. G. Karfiol.—p. 1356.
Significance of Blood Group in Malariotherapy. C. Speierer.—p. 1357.
Hemorrhage from Mucous Membrane of Larynx During Sepsis as Cause of Suffocation. E. Zimmermann.—p. 1357.
Differential Diagnosis of Acute Appendicitis and Typhoid. A. Frenkel.—p. 1359.
*Treatment of Local Infections with Cautery. C. von Bramann.—p. 1359.
Treatment of Paratyphoid B by Intravenous Injections of Acriflavine Hydrochloride. O. Boyksen.—p. 1362.
Experiences with Riedel's Mixture of Anesthetics Administered by Means of Ombrédanne's Mask. Horn.—p. 1364.
Ether-Chloroform Anesthesia with Ombrédanne's Apparatus. Hild.—p. 1365.
Modification of Ombrédanne's Mask and Simple Supporting Device. H. Franken.—p. 1366.
Supporting Device for Ombrédanne's Mask. Oberhofer.—p. 1367.
Unusual Complications of Influenza. F. Franke.—p. 1367.
Poisoning with a Barbital Preparation. Langendorff and Woll.—p. 1368.
Therapy of Phlebitis. K. W. Fischer.—p. 1368.
Value of Franken's "Air Test" for Determining Intactness of Placenta. H. Franken.—p. 1369.

Disturbances in Vertebral Column After Amputation of Thigh.—Karfiol asserts that pains in the stump in patients in whom the thigh has been amputated have their origin fro-

quently in the vertebral column. They are due to the overburdening that is caused by suspending the prosthesis from the shoulders. To overcome these difficulties it is advisable to attach the prosthesis to the pelvis.

Treatment of Local Infections with Cautery.—Von Bramann reports that at the surgical clinic of the university of Berlin the thermocautery was used during the last two years in 209 cases of local infections; namely, in 102 cases of progressive phlegmon, 66 abscesses, 35 cases of chronic osteomyelitis, 4 cases of emphyema of the joints, 1 case of carbuncle of the kidney and 1 case of pyelonephritis. The technic of thermocauterization in cases of phlegmons or abscesses is as follows: The phlegmon is incised in its entire length, and all cavities and pockets are opened. Then the granulations are removed with a sharp curet. Necrotic tissues are removed with the knife or with scissors. The vessels are seized but are not ligated until after the cauterization. The open wound is cauterized with Hadenfeldt's instrument. The muscular surface is thoroughly seared until an eschar is formed. The under surface of the skin, however, is cauterized only slightly or not at all, so as to avoid gangrene. Tendons, larger vessels, nerves and bones should not be cauterized. Following arrest of hemorrhage the wound is closed with a lacing bandage, which is covered by a second bandage. The dressing should not be changed until eight days after the operation. The pains, which before the operation are usually severe, cease entirely or partly immediately after the operation. The author gives detailed reports of cases that showed unusual aspects and also of those which had a fatal outcome. The reports show that thermocauterization does not always prevent erysipelas. However, the favorable results prove that, if employed correctly, it is a reliable method for the treatment of progressive phlegmons. For the therapy of phlegmons of the tendon sheath cauterization is not advisable, because neither the tendon nor the sheath of the tendon should be burned. But if the phlegmon spreads to the arm, then thermocauterization should be resorted to. Its advantages are the small scar, the elimination of tamponade, of drainage and of frequent changes of dressing, and the rapidity of healing.

Wiener klinische Wochenschrift, Vienna

43: 1021-1048 (Aug. 14) 1930

Observations During Tests of Competence of Heart and Circulation. F. Gaisböck.—p. 1021.
Modern Methods of Anesthesia. E. Domanig.—p. 1026.
Rudimentary Polyserositis. H. Mayrhofer.—p. 1031.
Roentgen Therapy of Para-Urethral Infiltrates. S. Grauer.—p. 1032.
*Segmental Neuralgia in Appendicitis. E. Czyhlarz.—p. 1033.
Prophylaxis of Rickets by Irradiation or by Internal Treatment? K. Peyrer.—p. 1033.
Early Treatment of Syphilis by General Practitioner. M. Oppenheim. —p. 1034.
Idem. W. Kerl.—p. 1035.
Physiologic Principles in Feeding of Patients with Tuberculosis. A. Durig.—p. 1036.

Segmental Neuralgia in Appendicitis.—Czyhlarz reports the case of a young woman who complained of severe pains in the right side. They radiated from the region of the lumbar vertebrae and extended to the region of the appendix. Movement of the right leg did not increase the pain. Pressure on McBurney's point was not painful and Rovsing's sign was likewise negative. Especially striking was the intense pain that was caused when the skin in the region of the appendix was pinched gently, and even superficial stroking of this region was painful. Another peculiar symptom was a point painful to pressure at the right of the first and second lumbar vertebrae, the point corresponding to the exit of the intercostal nerves. Because most of the appendicitis symptoms were absent, it was thought that the pains either were of a functional origin or were symptomatic of a neuralgia similar to the herpes zoster syndrome. The examination on the following day gave the same results. On the third day, however, the symptomatology had changed and now indicated appendicitis. An operation was performed and the patient recovered rapidly. The author asserts that formerly he had observed a similar case. Concerning the development of the peculiar aspects of appendicitis he advances the following theory: During an acute inflammation of the appendix, the pathogenic organism was carried by the lymphatic system to the paravertebral lymph nodes, and here the infection spread to the nerve segment and as a result the symptoms of a segmental neuralgia appeared. When the process in the appendix developed, it became more painful and the local symptoms of appendicitis became more noticeable.

43: 1049-1076 (Aug. 21) 1930

Relation Between Constitution and Diseases of Gastro-Intestinal Tract. H. Schur.—p. 1049.
Treatment of Skin Diseases by Means of Grenz (Infra-Roentgen) Rays with Special Consideration of Dosage. H. Fuhs and J. Konrad.—p. 1053.
*Rheumatism as Cause of Static Flatfoot: Rheumatic Flatfoot. A. Saxl. —p. 1057.
Significance of Extrasystolic Arrhythmia in Estimating Capacity for Work. W. Fischer.—p. 1059.
*Etiology and Symptomatology of Aneurysms of Cerebral Vessels. H. Steininger.—p. 1062.
Pneumothorax Treatment not Advisable in Tuberculous Patients with Emphysema. F. Hoffschulte.—p. 1064.
Surgical Therapy of Hyperthyreosis. B. Breitner.—p. 1065.
Value of Ferrán's Tuberculosis Therapy. O. Felsenfeld.—p. 1066.
Treatment of Suppurative Bartholinitis. K. Czerwenka.—p. 1067.

Rheumatism as Cause of Static Flatfoot: Rheumatic Flatfoot.—Saxl shows that, if rheumatic inflammations of the musculature, of the tendon sheaths or of the bursae in the lower extremities become chronic, an insufficiency in the function of the foot may be the result and static flatfoot develops. This condition differs from rheumatic flatfoot, which develops from an inflammation of the joints of the foot. To differentiate the two conditions is significant for the therapy. In rheumatic flatfoot the articular rheumatism should be treated first. Rest in bed and the administration of salicyl preparations are recommended. Following the cure of the arthritic process, orthopedic treatment should be instituted if necessary. In cases of static flatfoot the orthopedic treatment is of primary importance.

Etiology and Symptomatology of Aneurysm of Cerebral Vessels.—Steininger describes two cases of rupture of cerebral aneurysm and reports the results of the postmortem examinations. In both cases the aneurysm was caused by a trauma. In the first patient the trauma had occurred six years previously, in the second patient fifteen years previously. In both instances, diseases of the walls of the vessels were absent. The rupture of the aneurysm was sudden in both patients; however, severe headaches, of several months' duration, had preceded the rupture. The two cases demonstrate that cerebral aneurysm may have a traumatic cause. Other more frequent causes of cerebral aneurysm are arteriosclerosis, embolism, hypoplasia of the vessel walls and syphilis. Aneurysms of traumatic origin may exist for long periods without showing symptoms. In the cases reported, the rupture followed excessive use of alcohol and appendectomy, respectively. In discussing the symptomatology of cerebral aneurysm, the author stresses especially those symptoms which aid in the differentiation between tumor of the brain and cerebral aneurysm. If arteriosclerosis, syphilis or embolic processes exist, aneurysm is probable. Many cerebral aneurysms rupture repeatedly and give rise to successive exacerbations. When such repeated exacerbations are noted and when at such times spinal puncture yields bloody fluid, cerebral aneurysm should be thought of.

Zeitschrift für Tuberkulose, Leipzig

57: 209-288 (July) 1930

*Resistance to Tuberculosis. B. Lange.—p. 209. C'en.
Precavernous Ring Shadows and Spontaneous Healing of Caverns. H. H. Knüsli.—p. 228.
Pneumothorax Treatment in Manual Laborers. O. Neuburger.—p. 232.
*Oxygen Inhalations in Tuberculosis. W. Oksiusow.—p. 240.
Tuberculosis in Relation to Psyche. E. A. Schnieder.—p. 252.
Social-Psychologic Significance of Spread of Tuberculosis. G. Ichok. —p. 255.

Resistance to Tuberculosis.—In experiments on animals it was found that the virulence of tubercle bacilli obtained from persons with tuberculosis was frequently inversely proportional to the severity of the disease. Although strains of tubercle bacilli of decreased virulence were usually found in persons with mild forms of tuberculosis, nevertheless cases were observed in which a fatal outcome was produced by strains of tubercle bacilli of decreased virulence and, conversely, a case of bone tuberculosis of slight severity was observed in which the strain of tubercle bacilli isolated was of great virulence. Lange concludes, therefore, that the clinical course of tuberculosis is influenced less by the virulence of the tubercle bacilli than by the resistance of the patient.

Oxygen Inhalations in Tuberculosis.—On the basis of his observations in thirty-three cases, Oksiusow makes a preliminary report on the treatment of tuberculosis by means of oxygen inhalations. He states that the inhalation of pure oxygen through a respirator increases greatly the assimilation of food by undernourished tuberculous patients who cannot accustom themselves to the large rations used in sanatoriums. An observation period of two or three weeks should precede the oxygen inhalations. This form of treatment is indicated particularly in persons with compensated tuberculous processes who do not gain weight under routine sanatorium treatment. The technic of administration of oxygen inhalations is not complicated. Apparently the inhalations of oxygen cause hypoglycemia and this results in an increased activity of the insular apparatus of the pancreas. Of the thirty-three patients, three (one with hemoptysis and one with endocarditis) did not improve and five had been gaining weight before the treatment was begun. The remaining twenty-five, however, gained 72.87 Kg. in forty-seven days of treatment. It is therefore recommended that oxygen inhalations be tried in a large tuberculosis sanatorium.

Zentralblatt für Gynäkologie, Leipzig

54: 2049-2112 (Aug. 16) 1930

Justification and Means for Bringing Drugs for Alleviation of Pains of Childbirth to Every Woman. H. Sellheim.—p. 2050.
Saving Mother and Child: Review of Cesarean Operations During 1929. H. Doerfler.—p. 2054.
*Diabetes Insipidus During Pregnancy. K. J. Anselmino and F. Hoffmann.—p. 2061.
*Fluctuations in Bilirubin Content of Blood During Puerperal Infection. N. A. Woskressenski.—p. 2068.
Complete Incontinentia Alvi Following Schubert's Operation for Plastic Formation of Vagina. E. Melzner.—p. 2072.
Bilateral Paralysis of Peroneus Post Partum. E. Zimmer.—p. 2075.
Experiences with New Decapitation Instrument. S. Sztehlo.—p. 2080.

Diabetes Insipidus During Pregnancy.—Anselmino and Hoffmann report a case in which diabetes insipidus became manifest in two successive pregnancies and disappeared again during the first days of the puerperium. The diagnosis diabetes insipidus was based on the determination of the sodium chloride content of the blood and of the urine during thirst periods and during water tests. The examinations of the blood and of the urine revealed that this case of diabetes insipidus was of the type that is characterized by hypochloremia and hyperchloruria. On the basis of the Hann-Jacobi theory, according to which diabetes insipidus is due to a disturbance in the equilibrium between the secretions of the anterior lobe of the hypophysis and its posterior lobe (an excessive secretion of the anterior lobe causes diabetes insipidus) the authors reason that in this case the isolated manifestation of the disease during two gravidities may be explained as follows: A syphilitic infection caused a functional deficiency of the posterior lobe. Under ordinary conditions this deficiency was latent. However, during pregnancy the functional capacity of the organ was taxed more and the deficiency became manifest.

Bilirubin Content of Blood During Puerperal Infection.—After calling attention to the significance of the reticulo-endothelial system in the defense against infections, Woskressenski discusses the relation between the reticulo-endothelial cells and the bilirubin content of the blood. In 116 patients with puerperal sepsis the author repeatedly tested the bilirubin content. In those patients who recovered it was found that, although the values were high in the beginning stage of the sepsis, they decreased until the normal content was reached. In cases with a fatal outcome, however, the blood bilirubin increased steadily. In other instances it increased and decreased, corresponding to exacerbation and to improvement in the septic process. The author comes to the conclusion that in cases of puerperal sepsis the bilirubin curve indicates the prognosis.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

74: 3993-4080 (Aug. 9) 1930

False Diagnosis of Ischialgia. C. T. van Valkenburg.—p. 3994.
Symptomatology and Pathogenesis of Exophthalmic Goiter. G. C. Bolten.—p. 4002.
*Perforation Symptoms in Appendicitis. R. Finaly.—p. 4019.
Ventriloquism. E. Huizinga.—p. 4023.

Perforation Symptoms in Appendicitis.—Finaly thus sums up: Perforation may occur in appendicitis without high temperature or abnormal pulse frequency in cases in which the closure of the lumen of the appendix and the necrosis of the wall are the result of a mechanical cause and the infection itself is of secondary importance. Under such circumstances, gangrene or perforation may arise before the protecting adhesions have developed. Sudden lessening or cessation of pain is a sign of perforation if that manifestation is followed shortly after by high temperature, increase of defense symptoms and greater pulse frequency. The author warns, however, against regarding the aforementioned manifestation in all cases as a diminution of the process, since the absence of high temperature, almost normal pulse frequency and absence of rigidity in the abdominal muscles may be associated for varying periods with gangrene and perforation. Conservative treatment of appendicitis is contraindicated if the condition of the patient admits an operation, since, if adhesions are present, one cannot wait to see whether they are sufficient to localize the results of a perforation that threatens or has occurred. It will be recalled that the walls of an "infiltrate" are not impermeable for bacteria and toxins. In case of a suspected appendicitis, the physician should not wait until the next day before calling again but should call again in a few hours; for within a short period the true nature of the sickness may be revealed, and by the following day the perforation may be twenty-four hours old and peritonitis may have become generalized.

Hygiea, Stockholm

92: 545-576 (July 31) 1930

Impressions from Study Trip to Germany and Austria. R. Bergman.—p. 545.

Svenska Läkaresällskapets Handlingar, Stockholm

56: 115-210, 1930

*Primary Tuberculosis in Adults. M. Arborelius.—p. 115.

Primary Tuberculosis in Adults.—Intracutaneous tuberculin tests (Mantoux) with doses of up to 1 mg. were performed by Arborelius from 1927 to 1929 in 3,288 Swedish soldiers at the start of military service. Negative results were presented mainly by the men from rural communities, fully one third of whom were free from signs of a previous tuberculosis. In about half of those whose cutireaction became positive during service, other symptoms also appeared which agreed with the recognized signs of primary tuberculosis in children. In the more pronounced cases the primary infection was indicated chiefly by fever, greatly accelerated sedimentation reaction, marked tuberculin reaction and roentgenologically demonstrable pulmonary infiltrations in the hilus region. In some cases the picture was that of an acute bronchopneumonic pulmonary process. In three instances, objectively demonstrable symptoms were present before the cutireaction became positive. In the men with a positive reaction to begin with no cases as described were noted, but in several cases tertiary pulmonary tuberculosis appeared. After-examination was made in 218 out of 260 cases of typical primary tuberculosis in soldiers treated from 1923 to 1927. In almost half of the cases, exudative pleuritis had followed within six months. Of the patients examined up to six years after infection, about 15 per cent had tuberculosis and about 8 per cent had died of tuberculosis. While erythema nodosum often accompanied the primary tuberculosis, a connection between the two seems to Arborelius uncertain. Sixty case reports are given, together with a bibliography containing 359 references.

Ugeskrift for Læger, Copenhagen

92: 711-732 (July 24) 1930

Clinical Examination of Joints, Especially in Rheumatic Disorders: Some Technical Suggestions. H. Jansen.—p. 711.
*Osteochondritis Dissecans Cubiti. L. Ø. Christensen.—p. 716.
Case of Spontaneous Evolution. C. Kirkegaard.—p. 719.
Case of Panner's Disease. E. Busch.—p. 720.
Toxicity of Urine in Pregnancy and New Method for Aschheim-Zondek Reaction: Review. H. Nielsen.—p. 721.
Is "Mixtura Contra Epilepsiam" Contraindicated in Epilepsy? C. Clemmesen.—p. 721.

Osteochondritis Dissecans Cubiti.—Christensen says that this disorder should always be borne in mind in protracted diseases of the elbow in young men. The diagnosis can be verified by roentgen examination. Five cases are reported.